Industrial Equipment News

FOUNDED 1933

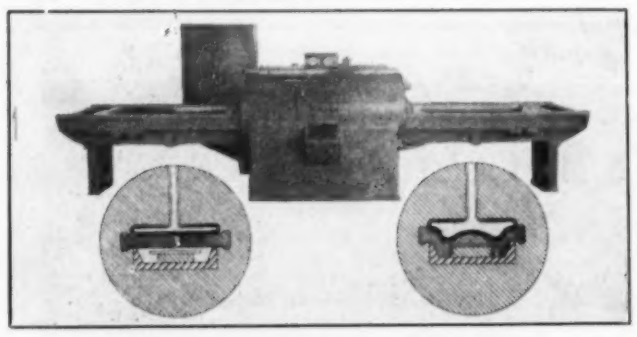
ORIGINAL REPORTER OF *What's New* IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

If you write maker identify as **IEN - 1**

PRESS . . Hydraulic machine forms work down around a male die

Source: VERSON ALLSTEEL PRESS CO.
9325 S. Kenwood Ave., Chicago 19, Ill.



Illustrated data in Bulletin VW-52

The company has released preliminary information on its new Wheelon direct acting hydraulic press, based upon the Guerin rubber pad forming process. The new machine encloses a hydraulic fluid cell within its housing above a soft rubber pressure pad. It mounts the male dies on a sliding tray so they can be moved in under the pad and out again for unloading and reloading. Hydraulic pressure, applied in the flexible fluid cell, causes the rubber pad to "flow" around the die to form the work blank.

The pressure housing is available in a range of sizes from 20 to 50 in. in width and from 50 to 168 in. in length. Tray supporting tables at the two sides add their length. Additional sizes are available in increments of plus or minus 24 inches. Operating pressure is 5,000 to 7,500 pounds. Pressure rating is 2,500 to 21,000 ton. Feature of the press is its simplicity and the small space required, compared to a standard upright metal-working press of similar capacity.

If you write maker identify as **IEN - 2**

WEIGHING . . Electronic scale actuated by sealed strain gage cells

Source: COX & STEVENS AIRCRAFT CORP.
52 Glen Cove Road, Dept. IEN, Mineola, N. Y.

No links or levers

Individual cells, measuring 6 in. in height, enclose hermetically sealed resistance wire strain gages and mount beneath the platform of a weighing scale in this new electronic equipment. Impulses from the individual units are amplified and combined at a control assembly where counter wheels provide a weight reading. Scale capacity can be specified from 10 to 400 ton.

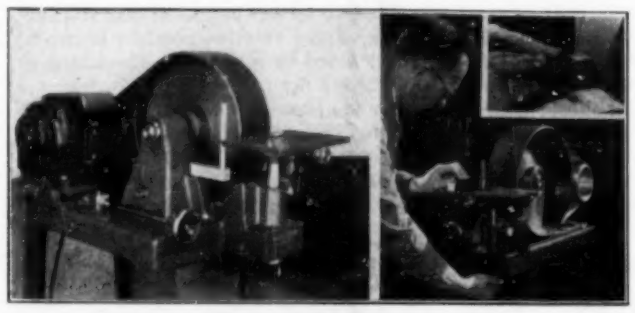
Standard tolerances are guaranteed. Weights in the 50-ton range can be printed and read in 5-lb. increments. The increment is 50 lb. on a 200-ton scale. Electronic equipment, similar in principle, can be supplied for automatic motion weighing of trucks and freight cars.

JOIN THE MARCH OF DIMES TO FIGHT INFANTILE PARALYSIS

If you write maker identify as **IEN - 3**

GRINDING . . Abrasive belt machine for finish sharpening carbide tool

Source: FENLIND ENGINEERING CO.
200 Mill St., Rockford, Ill.



A Fenlind Behr Manning development

Waterproof belt, Speed-Wet Durite, supplied by Behr-Manning Corporation, rides over a 14-in. cast iron contact wheel in this new tool grinding machine. The belt carries silicon carbide 220-grit abrasive. Drive is by a motor mounted at the rear of the contact wheel. Tools are positioned on a vertically adjustable table. It is set to a gage at one side so the contour of the wheel will be correct for a desired relief angle. The machine is known as the Micro-Finisher Model 13. List price is about $485.

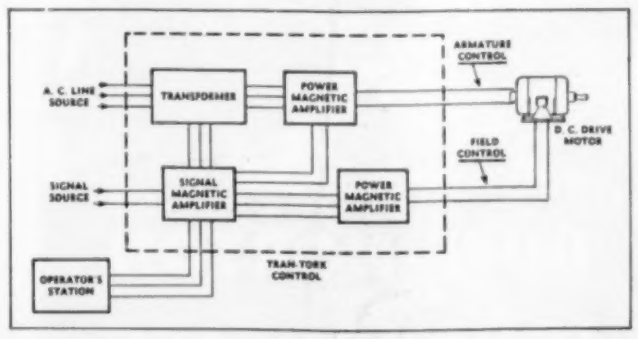
Clearance angle is rough ground initially by application on a silicon carbide wheel, prior to finish sharpening it on the table of the new machine. Then both front and side relief angles are finished and finally the nose angle is finished by swinging the tool through approximately a 90 degree arc over the top of the table. Light manual pressure is adequate to produce a fine finish. No face of the cutting tool need be held against the belt for more than 2 or 3 seconds.

The machine takes the place of diamond wheels and, because of its low operating costs and the excellent cutting edges it produces, makes carbide tipped cutting tools available to many shops unable to afford diamond wheel grinding.

If you write maker identify as **IEN - 4**

DRIVE . . Variable speed control to operate dc. motors from ac. source

Source: BOGUE ELECTRIC MFG. CO.
45 Iowa Ave., Paterson 3, N. J.



Any rating to 200 horsepower

Magnetic amplifiers for both the control and the power circuits take the place of electronic equipment in this new Tran-Tork variable speed drive. Assembly can be made to take power from an ac. circuit and control from an electric signal originating at a function such as speed, tension, torque, load, liquid level, temperature. Operation is through the magnetic signal and power amplifiers and rectifiers to both the armature and the field of one or more dc. motors.

The equipment is particularly suited for speed adjustment and for variable speed control in processing operations that involve changing conditions such as increasing diameters, greater resistance, as processing operations proceed. There are no moving parts in the control installation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

JANUARY, 1953

VOL. 21 No. 1

What do you need? . . . check this complete subject index for your current product needs. Asterisks (*) after page numbers mean editorial items. Others refer to advertisements.

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- ☐ *Engineering, Mr.* .....
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- ☐ *Purchasing, Mr.* .....
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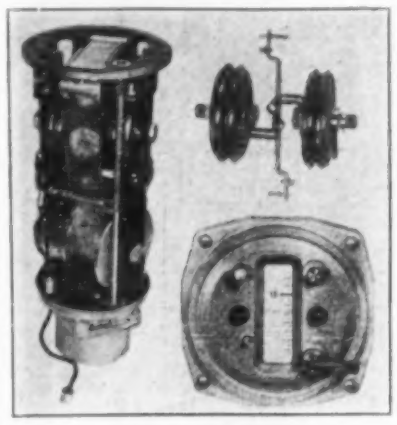
Address:

INDUSTRIAL EQUIPMENT NEWS
Thomas Publishing Company
A. J. GRANICK, Reader Service Manager
461 Eighth Avenue, New York 1, N. Y.

If you write maker identify as IEN - 5

GAGE . . Precision pressure cell employs 600 in. 35 mm. film scale

Source: FISCHER & PORTER CO.
6890 Jacksonville Road, Hatboro, Pa.



Details in catalog 85

Accuracy is within one part in 5,000 in the readings provided by this new Press-I-Cell for indications of absolute, gage, differential pressure and to determine liquid level and specific gravity. The new unit can be mounted in any position. It is not affected by gravity. It presents a 2-in. length of its 600-in. film scale back of a rectangular window. Manually operated and automatic servo motor assemblies are available to meet service requirements.

Overall dimensions are 5 in. in. diameter by 14 in in length. Standard ranges, such as zero to 400 in. of water, can be specified in overall limits between 5 microns vacuum to 100-lb. pressure maximum.

Two pair of opposed bellows connect to the pressure source to provide the actuating means. They face each other and are connected by a spring carrying a contact lever. Relative position between this lever and a follow-up cradle is detected by an impedance bridge in the servo operated assembly. Unbalance in the bridge circuit causes the servo motor to drive a correcting lead screw and, at the same time, a sprocket wheel that drives the scale film to unwind from one storage spool and wind on the other. Fixed relative position between the lever and cradle is determined by making and breaking a contact in the manually operated design.

A crank on the face of the instrument is turned to bring the contact back into correct position and, at the same time, to move the scale until both red and green indicator lights on the housing face are blinking. Readings are made under a hairline etched on the window protecting the scale.

If you write maker identify as IEN - 6

FILES . . Eighteen unit kit, 0.009 to 0.072 in. in thickness

Source: TACONY FILE & HARDWARE CO.
2812-16 N. 4th St., Philadelphia 32, Pa.

Single units also

Micro-File designates a new precision hand file, available in a kit containing 18 units. Thickness tolerance is within 0.000,4 to 0.000,7 inch. The files are designed particularly for precision slot filing, to gap file electrical contacts and spark plugs. They also can be entered into locations ordinarily inaccessible to a thicker file. Packaging is in a plastic film envelope with each file in an individual pocket. The plastic protects against scuffing and abrasion. Kit price is $12.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 7

For Powerful Lifting in Low Height Areas

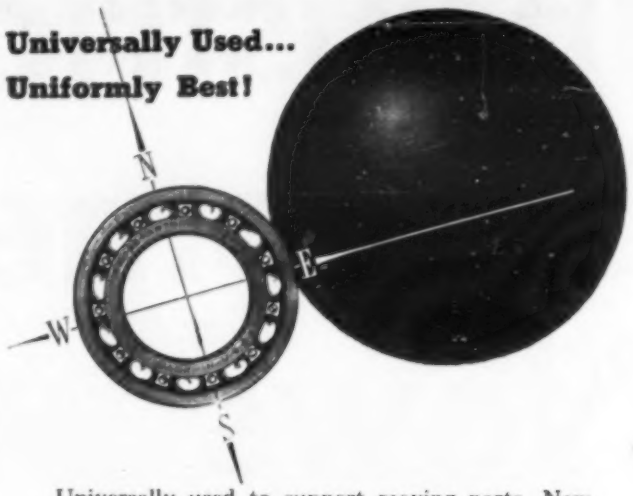
Only 10 inches high, this powerful little jack will lift loads as heavy as 25 tons up to 5 inches. Screw type, it operates with minimum effort—Low in height it is easily spotted under low loads. Place several throughout your plant for greatest efficiency in heavy lifting and moving jobs.

Write for Bulletin AD-12-L

THE DUFF-NORTON MANUFACTURING CO.
MAIN PLANT & GENERAL OFFICES, PITTSBURGH 30, PA.
CANADIAN PLANT, TORONTO 6, ONT.
"The House that Jacks Built"

If you write maker identify as IEN - 8

Universally Used... Uniformly Best!



Universally used to support moving parts, New Departure ball bearings reduce friction, wear and maintenance . . . permit higher speeds, bigger loads and better design. Sixty-four years of research and engineering experience make them uniformly best. Call on the New Departure sales engineering staff for help with new applications.

NOTHING ROLLS LIKE A BALL

NEW DEPARTURE
BALL BEARINGS

NEW DEPARTURE • DIVISION OF GENERAL MOTORS • BRISTOL, CONNECTICUT

If you write maker identify as IEN - 9

KILLS FIRE

Just pick up this Kidde Dry Chemical Extinguisher, point the horn and pull the trigger. Kidde's patented Diffuser Horn gives you extra protection... and extra safety. Write for free literature.

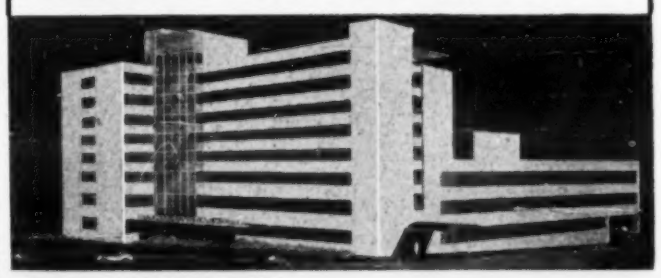
Kidde

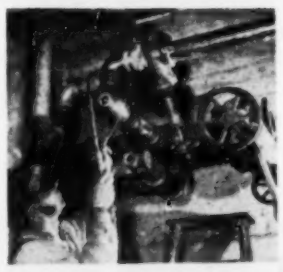
Walter Kidde & Company, Inc.
136 Main St., Belleville 9, N. J.

The word "Kidde" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc. and its associated companies

If you write maker identify as IEN - 10

In this new BEEKMAN-DOWNTOWN HOSPITAL — New York City . . .





All Water Piping is brazed with SIL-FOS

Type B brass pipe and Flagg face feed fittings were used—all joined with the low-temperature silver brazing alloy SIL-FOS. Eliminating of threads permitted use of this pipe which has 1/3 the wall thickness of standard pipe — with tremendous savings in metal and weight. Pipe sizes ranged from 1/2" to 5".

FOR FULL DETAILS *about pipe joining with SIL-FOS write today for Bulletins 17 and 20.*

HANDY & HARMAN 82 Fulton St., New York 38, N. Y.

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LOOK HERE ➡

for tough, corrosion-resisting metals with electrical and electronic properties

This latest revised edition of "INCO NICKEL ALLOYS FOR ELECTRONIC USES" is just the thing to provide you with valuable fingertip information on the right alloy for your electronic or electrical design.

- It contains a summary of the various nickel alloys for use in electronic and electrical applications.
- It gives a composition breakdown of the alloys and discusses the general characteristics of each.
- It lists typical uses for each alloy and describes the forms produced.

As you know, Nickel is essential in defense; but if you have a redesign problem to give longer service life in electrical or electronic equipment — or a new product in the making, it's a safe bet you will find new and useful information on Nickel and Nickel Alloys in this up-to-date booklet. Send for it now. Use the handy I.E.N. reply card to ask for your free copy.

INCO

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

If you write maker identify as IEN - 12

Vitrotex Magnet Wire gives higher protection against hot spots . . . as high as 130 C.

When "Hot Spots" Cripple Motors— Rewind with VITROTEX

Glass insulated Vitrotex* Magnet Wire protects windings against "hot spots" . . . provides an additional 25 C protection over Class A insulation. Soft, pliable Vitrotex winds easily and compactly. Its Class B insulation, bonded with a special high-temperature varnish, resists abrasion, moisture, acids, oils and corrosion.

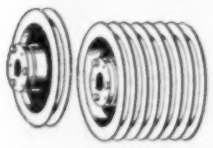
Anaconda has a complete line of magnet wires—noted for exceptional uniformity. Call your Anaconda Distributor. Write for Catalog C-69-A. Anaconda Wire & Cable Co., 25 Broadway, New York 4, N. Y.
*Reg. U.S. Pat. Off. 52467A

Class B VITROTEX • **Class H** SILOTEX* • **Class A** ENAMEL FORMVAR NYFORM NYLON

the right magnet wire for the job ANACONDA®

If you write maker identify as IEN - 13

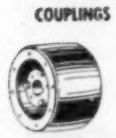
To BROWNING-ize means to ECONOM-ize



SINGLE AND MULTIPLE GROOVE SHEAVES

Save time and money by standardizing on **BROWNING'S** simple interchangeable ***BUSHING*** system in all your power transmission equipment.

RIGID AND FLEXIBLE COUPLINGS

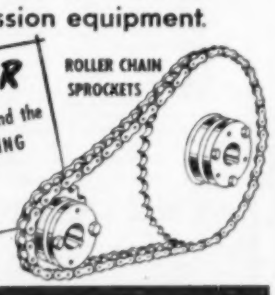


PAPER PULLEYS

SPLIT TAPER BUSHINGS

WRITE FOR Catalog #GC101 and the name of BROWNING DISTRIBUTOR near you.

ROLLER CHAIN SPROCKETS

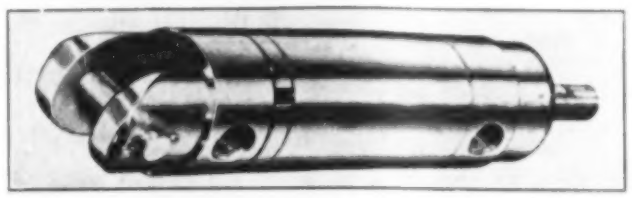


BROWNING MANUFACTURING COMPANY
MAYSVILLE • KENTUCKY

If you write maker identify as IEN - 14

CYLINDER . . Pneumatic design, bore 1 to 8 in., stroke as specified

Source: TOMKINS-JOHNSON CO.
516-19 N. Mechanic St., Jackson, Mich.



Dimensions, layouts in Bulletin SM-1

Spacemaker trade names a new line of pneumatic power cylinders in which seamless steel heavy wall tube is assembled with heads that have the same outside width dimension to conserve mounting space. The cylinder wall is honed and hard chromium plated. The piston is ground and plated.

The heads are made of steel. Relative port positions can be rotated and locked as required. Assembly includes a metallic rod wiper, piloted packing glands, permanent piston rod packing adaptor, self-adjusting piston rod packing.

Six designs include foot, flange, swivel as illustrated, trunnion and rabbet. Internal construction can be specified plain or with cushions at either or both ends.

If you write maker identify as IEN - 15

HARDBOARD . . For product use and construction, smooth both sides

Source: MASONITE CORP.
109-13 W. Washington St., Chicago 2, Ill.

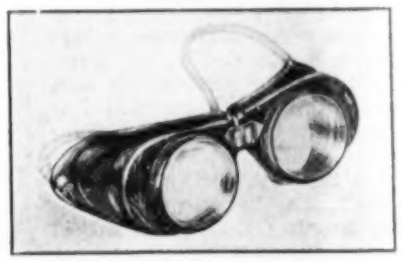
Cuts without material waste

Duolux, featuring two smooth faces in the company's hardboard lines, is now available in a ¼-in. thickness, in panels 4 or 5 ft. in width and to 15 ft. in length. The panel will not warp. It is resistant to penetration by moisture. It takes and holds paint finish on its smooth grain-free surface.

If you write maker identify as IEN - 16

PROTECTING . . Plastic goggle to fit over prescription spectacles

Source: CHICAGO EYE SHIELD CO.
2326 Warren Blvd., Chicago 12, Ill.



Stops flying particles

Series 548 and **549** represent new design in the company's line of goggles for chippers and welders. The new unit is about 20 per cent larger than the company's previous design to fit over prescription spectacles. Standard 50-mm. lenses seat flush with rings to deflect flying objects. Direct and indirect ventilation is provided through slotted lens rings and through perforated side shields or solid shields. Round rubber, elastic or flat rubber headband can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 17

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO LAMP CHANGERS

PRACTICAL • TIME SAVING • PREVENTS PERSONAL INJURIES

FOR CEILINGS, SIDE WALLS, ELECTRIC SIGNS, ETC. • HEAD ADJUSTS TO ANY ANGLE

Designed to remove and replace lamp bulbs in high and out of way places . . . Works like human hands on the end of a pole . . . Handles lamps up to 500 watt; pole lengths 6', 12' and 18'.

WRITE FOR BULLETIN NO. 46

IPCO *Safety Equipment for all Industries*

INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

If you write maker identify as IEN - 18

LUBRICATION ECONOMY

"LUBRIPLATE saved us $2,098.16 in seven months"

The BROWN COMPANY, Quality Paper Makers of Berlin, New Hampshire, said this in an operating report on one of their Kraft Mill Lime Kilns after changing over from conventional oil lubrication to LUBRIPLATE No. 130AA. Huge savings like this cannot be overlooked. It is worth your while to see what LUBRIPLATE Lubricant can save you.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

VISIT OUR BOOTH
PLANT MAINTENANCE SHOW
CLEVELAND
JAN. 19-22, 1953

LUBRIPLATE DIVISION

Fiske Brothers Refining Co., Newark 5, N. J. • Toledo 5, O.
—DEALERS EVERYWHERE, consult your Classified Telephone Book—

If you write maker identify as IEN - 19

- One-hand clutch operation avoids touching lead, smearing fingers or drawing.
- Exclusive collet holds lead in bulldog grip, prevents it slipping back into holder
- Clean, balanced, efficient for every type of drawing, sketching, rendering, coloring.

CASTELL Imported Lead

18 degrees, 7B to 9H—gives *more* prints — cleaner and sharper prints — than any other drawing lead. Lasts 25% to 33⅓% longer. Black or colored. Your Drawing and Art Supply Dealer has them.

CASTELL
the drawing pencil with the Master Degrees

If you write maker identify as IEN - 20

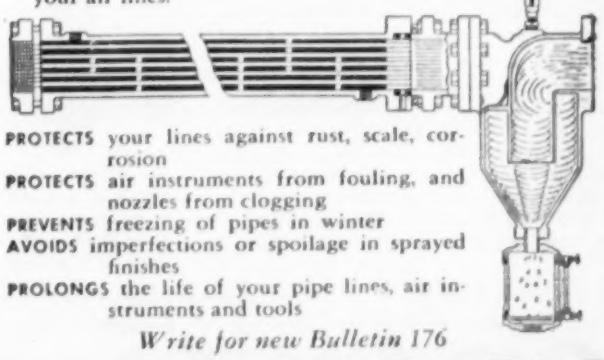
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator.

with ADAMS Aftercooler and Cyclone Separator

- Reducing compressed air temperature to within 10° of the cooling water, Adams Equipment condenses and removes destructive water and oil vapors from your air lines.



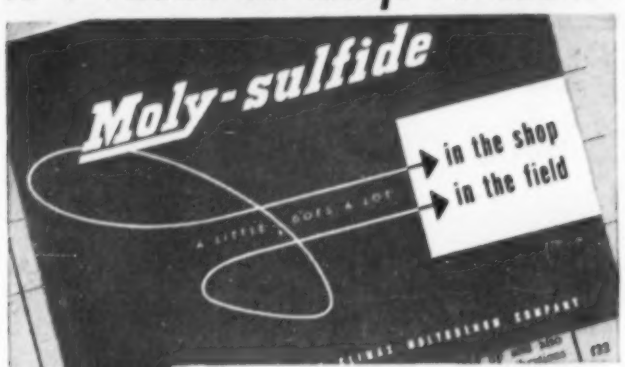
PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R.P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

If you write maker identify as IEN - 21

154 ideas on ways to use...



154 varied applications of molybdenum sulfide in the shop and in the field are described in a new booklet now available. This solid-film lubricant has demonstrated unique anti-friction properties under conditions of extreme pressure, high velocity, elevated temperature, or chemical attack.

The 40-page booklet contains the records of solved lubrication problems—some might solve your own.

Moly-sulfide
A LITTLE DOES A LOT

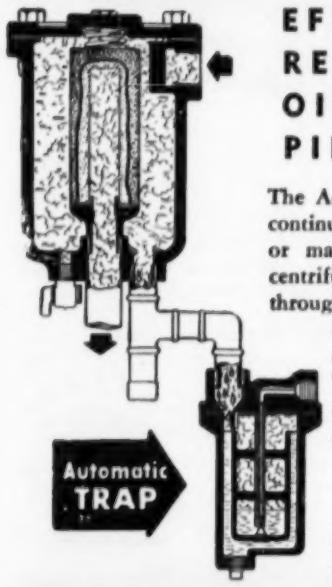
The lubricant for extreme conditions

MS-6A

Climax Molybdenum Company
500 Fifth Avenue, New York City 36, N.Y.

If you write maker identify as IEN - 22

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES OIL, WATER, PIPE SCALE

The Adams *Poro-Stone Filter* gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation.

Write for complete data Bulletin 176

R. P. ADAMS CO., Inc.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* **AIR FILTER**

If you write maker identify as IEN - 23

Get your WATER LEVEL GAUGES from CRANE

They're precision-made with the same care that goes into every Crane Valve you buy!

Here's an item that usually rates small attention in an over-all piping program. But make no mistake, there's nothing lacking in quality when you get it from Crane. Materials are the finest—workmanship the best, to assure the service and satisfaction you expect from a product that bears the Crane name. See your Crane Representative or Crane Catalog for complete details.

No. 610 Water Level Gauge of polished brass with Pyrex glass. Working Pressure: 175 pounds.

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Industrial Equipment News

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THIS ISSUE 68,000 COPIES

Printed by Charles Francis Press, New York

Industrial Equipment News acts solely in a news reporting capacity for data supplied to it on new industrial developments.

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461 Eighth Ave., New York 1, N. Y.

VOL. 21 JANUARY, 1953 No. 1

Prosperity—After Taxes

Many, if not most, of our hopes for good business in the months to come depend on the return our new leaders can make for us to true prosperity, counted after and not before taxes. The job of straightening out the current tax setup is a big one. We can help individually and in relation to the businesses we are in by bringing the facts out in the open for all to see. Then our law makers will have the backing they need to do a real job. Many of these facts are hidden at present. Only a few really know how much and for what we are paying.

For example—Crawford H. Greenwalt, duPont president, said, "Any business knows that corporate taxes find their way ultimately into the price of goods offered for sale. . . . When the nation's tax bill is some 33 per cent of the national income, as it is at present, the tax bill of the average citizen is not far below that percentage, whatever he may think he pays directly. Thus a wage earner, with a wife and two children, whose net income is about $4,000, pays directly about $350, but his indirect taxes bring the total to at least $1,200."

Benjamin F. Fairless, board chairman for United States Steel, talking to the Georgia State Chamber of Commerce, stated, "Under our present fiscal policies, business has been able to survive and grow only where it has managed to pass the burden of taxes to its customers . . . the so-called corporation tax is nothing more nor less than a hidden sales tax, concealed in the price of everything we buy.

"More than a third of the price of a loaf of bread, about 40 per cent of the price of a bottle of milk, a third of the price of every pound of meat goes to taxes. There are 475 taxes on the materials and construction costs in building a house, 116 taxes on a man's suit, 150 on a lady's hat. The purchaser of a $2,000 automobile is actually paying $1,375 for the car itself. The other $625 is taxes. Suppose the sales ticket on that car had read—Price $1,375, Tax 45 per cent, Total $2,000.

"If every business in this country could bill its customers separately for the taxes which it, as the unpaid agent of government, is forced to collect from them, and if those taxes were shown clearly on every bill of sale, all along the line of production, so their total could be plainly marked on the price tag of the finished article for the buyer himself to see, then he or she would know exactly where to place the blame and would do so with emphasis and vigor that the most callous Government spender could not ignore.

"If we examine the actual purchasing power of all our people—after taxes—and if we measure that purchasing power in terms of honest, 100-cent, prewar dollars, we find that the real per-capita income has not increased since 1944. In fact it has declined by about two per cent since that date."

There you have just a word or two from statements by two really big men in our business world. It is enough to open a line of action we can take to back up the new Administration. Let's each of us do our little part to strengthen and build the movement that made its start last November looking toward prosperity —after taxes.

W. E. Irish.

If you write maker identify as IEN - 24

HAS EVERYTHING!
HANDIEST CABINET EVER MADE FOR STORING SMALL ITEMS

"HAZ-BIN, JR."
SUCCESSOR TO "JIFFY" CABINETS

Contents visible! Lifetime-guaranteed, crystal-clear plastic drawers. Strong all-steel cabinet has individual drawer guides. Baked-on silver-gray hammer finish. Sent complete with index cards, removable lengthwise and crosswise drawer dividers, rubber feet.

32-DRAWERS
(96 compartments)
15⅜" high
6" deep
12½" wide
$12.95

Lifetime Guaranteed CLEAR PLASTIC DRAWERS
Drawer size for all models—2-3/4" wide, 1-7/16" deep, 5-7/8" long. Movable dividers separate each drawer into 3 compartments.

Made in 9 Sizes:

J-128	128 drawer	(384 compartments)	$55.95
J-96	96 drawer	(288 compartments)	42.95
J-64	64 drawer	(192 compartments)	24.95
J-48	48 drawer	(144 compartments)	20.95
J-32	32 drawer	(96 compartments)	12.95
J-24	24 drawer	(72 compartments)	10.95
J-16	16 drawer	(48 compartments)	7.75
J-12	12 drawer	(36 compartments)	5.95
J-8	8 drawer	(24 compartments)	4.25

AKRO-MILS, INC.
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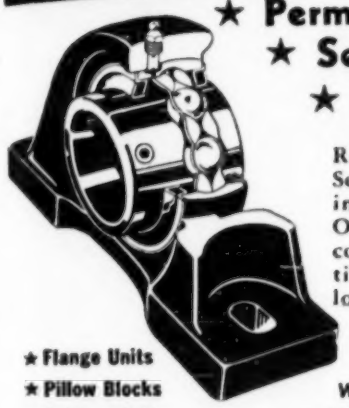
AKRON 9, OHIO

10 Day FREE Trial! Money Back Guaranteed!
SEND FOR FREE DESCRIPTIVE FOLDER

If you write maker identify as IEN - 25

ONLY SEALMASTER BALL BEARING UNITS
Offer ALL these features...

★ Permanently Sealed
★ Self-Aligning
★ Pre-Lubricated



Replace worn bearings with SealMasters. They give lasting service and economy. Only SealMaster bearings combine the features essential to smooth operation, long life, easy installation and top performance in quiet power transmission.

★ Flange Units
★ Pillow Blocks
★ Take-up Units
★ Cartridge Units
★ Flange Cartridge Units

Write us for YOUR free copy of SealMaster Catalog No. 845

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Tellevel—Bin Level Controls · Car Loaders · Car Pullers · Winches · Variable Speed Reducers · SealMaster Ball Bearings · Saco Speed Reducers

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If you write maker identify as IEN - 26

SAVE UP TO 85%

WAR SURPLUS SAVINGS

STAND MAGNIFIER — 1.49
Handy stand magnifier with universal adjustments. Overall height: 6". Has powerful, clear magnifying lens.

MAGNETIC BASE-INDICATOR HOLDER... — 3.50
A time saver for precision checking. Magnetic base fits curved or flat surface. Has 45-50 lb. pull. Stainless steel 6½" rod mounted in ball socket permits universal settings...
Note: We have complete line of instruments, depth gauges, inspection mirrors, etc. WRITE TODAY

GEAR HEAD MOTORS
Heavy duty, G.E. Gear Head motor. 2 HP, 24V. DC, 125 amp., reversible motor drives a reduction gear unit giving 36 to 1 ratio at take-off. Also will operate on 6 or 12 volts.
MOTOR ALONE 4.95
GEAR BOX 7.25
36 to 1 G.E. (306 shaft RPM)
28 to 1 Eclipse (130 shaft RPM)
40 to 1 Eclipse (110 shaft RPM)
10.95 EA.

ELECTRIC ACTUATORS
Hundreds of uses for any mechanical device needing controlled 2 way action. Opens, closes, raises or lowers doors — windows — gates — valves. CTU-2 — Faste Linear Actuator — 24 volt, DC, 8500 RPM, 1/6 HP — series wound motor. 6½" stroke in 13½ sec. Compression and tension loads up to 750 lbs. Adjustable micro switch for limits of travel. Overall length, retracted 11" — 7.95
We also carry many more sizes and types of Actuators. Write today for information.

230 Pg. CATALOG
Amazing Values! 1000's of Items for Mfgr., Mechanic, Sportsman, etc. Save on Machine Tools, Hydraulics, Pumps, Valves, Hand & Power Tools, Instruments, etc. Send for your copy today!

NEW — INSIDE - OUTSIDE **VERNIER CALIPERS**
German made by one of Europe's leading specialists in precision tools. Measures inside-outside & depth in .001" to 6" in 1000ths and 1/10mm to 150mm in 10ths. 9.75
MICROMETERS — 0" to 1" in 1,000ths. Has lock-nut & ratchet ...ONLY — . . . 9.75

BENDIX HYDRAULIC PUMP & MOTOR
Has 3-1/2 GPM capacity at 600 PSI. Motor is 1½ HP, 24V, D.C. Will operate, on either 12 or 32V, DC current. Has built-in, relief valve adj. to 1500 PSI. This unit ideal for hyd. lifts, portable loaders, etc. 19.50

HYDRAULIC HAND PUMP
Operating pressure 2000 PSI. Cap., 1.5 cu. in per complete cycle . . . 12.75

HYDRAULIC ACCUMULATORS
A-2B FLOATING PISTON TYPE — 4" x 18" Built to stand 3,000 PSI 12.75
A-5 VICKERS — 10" dia. Ball type. Built to stand 2000 P.S.I. 24.75

HYDRAULIC CYLINDERS
Gives 20,000 lb. thrust (push or pull) using 1500 PSI line pressure as obtained from our hydraulic pumps. Will produce up to 40,000 lb. thrust with 3000 PSI. Can also be used on low pressure air systems. 4" bore; 18" stroke; 30½" length. Ideal for roof form — shop machinery. 29.75

No. 3 HYDRAULIC CYLINDER
Double action. Bore is 1" — Shaft ½". Has stroke of 2½" to 4". Stroke can be adjusted with internal sleeve stops. Overall length is 8½". Will take 1800 lbs. continuous duty. 3000 lbs. intermittent. Will lift or push up to 1100 lbs. 5.75
We stock over 30,000 Hydraulic Cylinders, Valves, Pumps, Accumulators, Hand Pumps, Motors, Hose, etc. All at Money Saving Prices.

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LOS ANGELES 58, CALIF.

Order from this ad. Pay by M.O. or check. P.O.'s accepted from D&B firms. No deposit on C.O.D.'s.
All Prices F.O.B. Los Angeles

If you write maker identify as **IEN - 27**

6 GOOD REASONS FOR CHOOSING. . . LOVEJOY UNIVERSAL JOINTS

- ★ Concentricity guaranteed to .001.
- ★ Rivets ground flush with body for close quarter work.
- ★ Greater angle of operation with maximum bearing surface and strength.
- ★ No binding, backlash or inplay of pins.
- ★ Highest grade heat-treated alloy steel.
- ★ Exceed Armed Forces rigid requirements.

Available in 13 sizes. Diameters ½" to 4". Lengths 2" to 10⅝".

WRITE FOR CATALOG TODAY

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake Street Chicago 44, Illinois

Also Mfrs. Lovejoy Flexible Couplings and Lovejoy Variable Speed Transmission

If you write maker identify as **IEN - 28**

S-A WINCHES SAVE TIME and MANPOWER

There are many lifting and pulling jobs around a plant which can be handled quickly, safely and more economically by an S-A hand-powered or motorized winch. A variety of S-A winches are available, enabling one man to lift loads up to 3000 pounds.

Write for Bulletin No. 340 for complete details.

Both Hand and Motor types for all kinds of hoisting jobs.

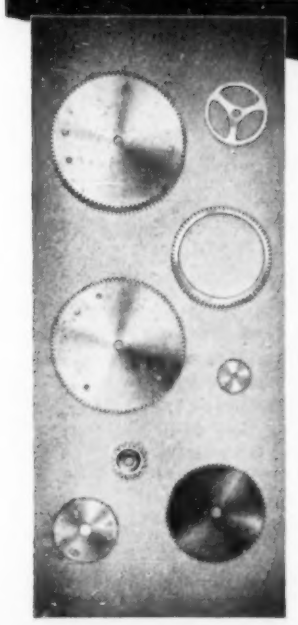
STEPHEN S-ADAMSON MFG. CO.

Tellevel-Bin Level Controls · Saco Speed Reducers · Car Loaders · Car Pullers · Winches · SealMaster Ball Bearings

231 RIDGEWAY AVE., AURORA, ILLINOIS

If you write maker identify as **IEN - 29**

WINZELER STAMPS GEARS *Uniformly* TO THE MOST *Exacting* SPECIFICATIONS!



WINZELER raises STAMPED Gears to new heights of uniformity and precision. Whether your needs call for 5,000 or 1,000,000 . . these *better* Stamped Gears cut rejects to practically zero! Compound dies, made with extreme precision by our own tool and die experts insure holding flatness, tolerances and dimensions to the most exacting specifications.

Take advantage of the unusual skill and long experience of our specialized staff. Modern methods and machinery assure efficient high speed production at *low cost*. Winzeler better Gears are stamped from any material, or assemblies produced by staking, brazing or riveting. Our engineers will gladly lend valuable aid on your problems.

SEND FOR *suggestions, ideas, samples and low cost estimates. No obligation. Write or phone today!*

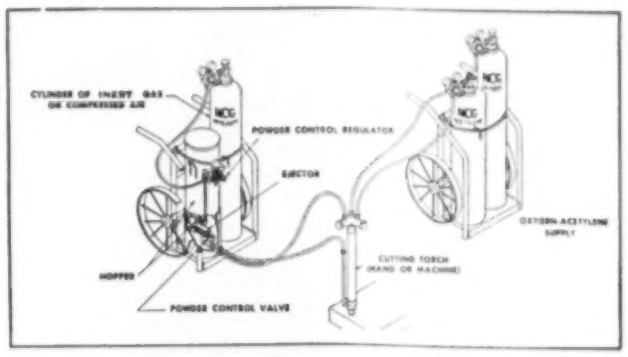
WINZELER MFG. & TOOL CO.

1716 WEST ARCADE PLACE • CHICAGO 12, ILLINOIS

If you write maker identify as **IEN - 30**

CUTTING . . Powder burning torch for stainless and hard to cut steels

Source: NATIONAL CYLINDER GAS CO. 838-42 N. Michigan Ave., Chicago 11, Ill.



Ask for illustrated Ferrojet folder

Ferrojet trade names a recently improved powder dispenser. It feeds finely divided iron powder into the gas stream of an oxy-acetylene cutting torch of either hand or machine design. The powder heats to ignition temperature in the preheat flame. It burns in the oxygen stream, creates the high temperature and slagging action cut stainless steel.

The powder feeds from its supply hopper into an ejector mechanism under pressure supplied by a cylinder of inert gas or compressed air. The conveying gas passes through the injector then atomizes the powder and carries it to the tip.

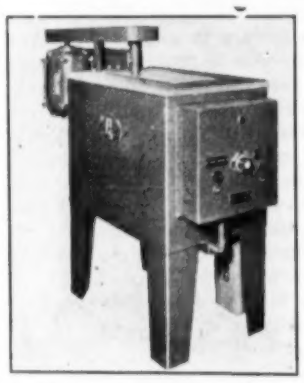
The new dispenser is known as Model 301. It is shown to the left in the illustration on the company's No. 7024KD two-wheel gas cylinder truck. The complete illustration shows a typical cutting torch and a second cart carrying oxygen and acetylene cylinders to supply the torch.

One form of the equipment has been developed for quick removal of riser pads, chill bars, fins from stainless and other alloy steel castings. Test applications indicate this equipment to operate about 10 times faster than mechanical chipping and grinding in the same application.

If you write maker identify as **IEN - 31**

MELTING . . Electric tank to hold hot dip coating plastics

Source: GLOBE IMPERIAL CORP. 2021-25 Kishwaukee St., Rockford, Ill.



For a production line

Five sizes in the company's new line of melting tanks for Plastic Seal hot dip coating materials hold 6 to 1,225 lb. of plastic per load. The combination of motor driven mixing impeller and heating elements that radiate to the sides of the tank make it possible to melt a 44-lb. load in a little under two hours.

Smallest unit measures 8 by 4 by 6 inches. The largest measures 13 by 6 by 18 in. in inside tank dimensions. The largest tank can process 2,500 lb. of work parts in an 8-hr. shift. Control centers at a Robertshaw thermostat and a Fenwal switch, the latter to shut off the heat and prevent burning the plastic if the manual switch is accidentally left closed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 32**

A PAID NEWS ADVERTISEMENT BY THE ALVEY-FERGUSON CO.

CONVEYING . . 90° power roller curve for handling around curves

overcomes all past difficulties

A new type, 90° Power Roller Curve Conveyor — which overcomes all past difficulties in conveying boxes, cartons and packages around curves—has recently been perfected by The Alvey-Ferguson Co.

The basic differences in the design of this conveyor are: the use of tapered rollers which provide efficient package control with no skewing or jamming action—and a simple V-belt drive which assures quiet, smooth operation with extremely low maintenance cost. This V-belt drive requires no oiling and it can be readily removed without the use of special tools and without dismantling the conveyor.

Power for driving the V-belt is provided from an individual motor or from an adjacent conveyor. This new Tapered Roller Curve Conveyor is so constructed as to be combined easily with other A-F Conveyor Sections.

For latest information on modern, efficient handling methods for all types of products and materials, write

THE ALVEY-FERGUSON CO.
339 Disney St., Cincinnati 9, Ohio

If you write maker identify as **IEN - 33**

CHROMALOX *Electric* STRIP HEATERS

For fast, dependable, on-the-spot heat

Quick, Easy Installation— Economical Operation

Chromalox Electric Strip Heaters are modern industry's rugged tool for putting heat wherever it is needed—as in dies, tanks, pipelines, ovens and countless other spots. Chromalox Units can be clamped to any flat or curved surface. They can be tailored to your needs, anywhere a little or a lot of dependable heat is wanted. Easily installed, often with existing power lines, they produce the exact amount of heat required. Lengths from 4" to 96", width from 1" to 2½". See how multi-purpose Chromalox Electric Strip Heaters fit into your plant operations.

Write for Fact Packed CATALOG 50

IB-11

It's yours without obligation.

Industrial Div., EDWIN L. WIEGAND CO., 7505 Thomas Blvd., Pittsburgh 8, Pa.

See Chromalox Radiant Heaters Advertisement, Page 11

CHROMALOX

ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as **IEN - 34**

Special Self-Sticking BRADY QUIK-LABELS

In Colors, Sizes, Shapes and Wording YOU Need!

- PRODUCTION
- INSPECTION
- INSTRUCTION
- TRADEMARKS
- PARTS & SERIAL NUMBERS

THOUSANDS OF USES throughout Industry. Brady self-sticking QUIK-LABELS can be made to your special requirements. Come on handy dispenser cards or rolls. Quickly applied—durable—silicone coated to resist dirt, grease, moisture. Low in cost, inexpensive to apply. Save time and money. Send for complete details and FREE samples of these special labels, today.

DISTRIBUTED IN 125 PRINCIPAL CITIES.

MANUFACTURERS OF SELF-STICKING PRODUCTS

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

W.H. BRADY COMPANY

765 W. GLENDALE AVE., MILWAUKEE 12, WISCONSIN

If you write maker identify as **IEN - 35**

Food Plant Trial Proves need for Allis-Chalmers *Electronic* Metal Detector

"IF ONLY ONE piece of stray metal is detected in our product in a *week*, we need the Allis-Chalmers electronic Metal Detector," officials of a meat packing company stated. A trial of several weeks was made.

During the test, *at least one piece of metal was found per day* . . . pieces like those shown at the left . . . proving the need for the detector. The machine was purchased.

The Allis-Chalmers electronic Metal Detector catches nonmagnetic as well as magnetic metal. It spots particles as small as .047 in. diameter. Call your A-C Sales Office for booklet 7217 showing ways of supplying A-C Metal Detectors.

A-3118

Allis-Chalmers Milwaukee 1, Wis.

ALLIS-CHALMERS

If you write maker identify as IEN - 36

HORIZONTAL POWER . . .

. . . where Belt Surface Conveyors can't stand abuse of heavy metals, sharp corners or rough edges, Metzgar "Live Roller" units provide an all-metal, powered bearing surface. May be used as power booster in gravity line. Work can be slowed or held without stopping machine.

4 STOCK SIZES
11½" - 15"
18" - 24"
WIDTHS

Furnished portable or permanent mounted. Choice of one to five rollers per foot. Lengths to suit. Ball bearing throughout. Gearmotor AC or DC drive.

ASK FOR FOLDER NO. 1249

METZGAR CO.

MFGRS. OF WHEEL & ROLLER GRAVITY & LIVE ROLLER CONVEYORS • POWER BELT CONVEYORS • SWITCHES • ACCESSORIES • REEL DOLLIES & END-WOOD WHEELS.

METZGAR CONVEYORS

417 Douglas, N. W.

GRAND RAPIDS 4, MICH.

If you write maker identify as IEN - 37

MANUAL-ELECTRIC

American MonoRail cranes offer all the advantages of lightness, easy movement, strength, live load capacity, interlocking and safety devices for loads up to 5 tons. Cranes are available for manual or power operation controlled from cab or floor.

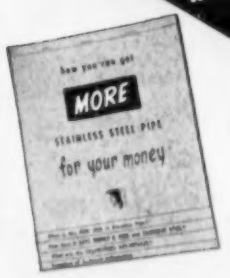
SEND FOR BULLETIN C-1

THE AMERICAN MONORAIL CO.

13111 ATHENS AVENUE • CLEVELAND 7, OHIO

If you write maker identify as IEN - 38

money-saving ideas



ABOUT *Carpenter* STAINLESS PIPE

These data sheets tell you how to SAVE MONEY (up to 50%) and conserve Stainless Steel by getting the facts about this newest of Stainless Pipe schedules.

To find out how Schedule 5 gives improved flow conditions at less cost, just drop us a line or return the coupon below. We will gladly put your Schedule 5 Data Sheets in the mail.

THE CARPENTER STEEL COMPANY
Alloy Tube Division, Union, N. J.

Please send me a copy of the Carpenter Stainless Tubing Data Book.

NAME _____ TITLE _____
(Please Print)

COMPANY _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____
(Firm name and title must be on coupon)

If you write maker identify as IEN - 39

TESTING . . Viscosity meter for continuous indication and control

Source: ULTRA-VISCOSON CORP.
1238-42 Main St., Hartford 3, Conn.

For process control

New assembly for connection to a total of 16 individual probe stations has been added to the company's ultrasonic viscosity meter, previously described IEN-4659-52. The new Model MP employs hermetically sealed ultrasonic probes, each about the size of a fountain pen, for permanent installation in processing equipment or pipe lines. All of the probes connect to a centrally located meter from which they can be located at various distances to 1 mile. The central instrument provides for automatic viscosity measurement in temperatures to 650 deg. F. at pressures to 1,000 pounds. A record is made on a standard multi-point industrial recorder.

The meter generates and applies ultrasonic waves to each probe. It employs the probe reaction to provide a frequency reading and to actuate indicating, recording and control equipment. The reading represents the product viscosity and density in centipoises multiplied by grams per cc. for Newtonian liquids, or apparent viscosity multiplied by density for non-Newtonian liquids. A measurement is made in milliseconds so the readings are instantaneous in relation to processing conditions. Four decade ranges can be set up, maximum at 50 to 50,000 centipoises.

If you write maker identify as IEN - 40

ADHESIVE . . Bonding cement sets drill bushings in jig or fixture

Source: SHERIDAN PRODUCTS
1052-56 E. Hyde Park Blvd., Inglewood 3, Calif.

Only mix a little

B-K Cement No. 7 is a new adhesive developed to anchor drill bushings in a fixture, made of aluminum, Fiberglas, or steel, so press fitting between the bushing and the jig or fixture is not required. The adhesive is particularly suited for master tooling operations in construction of complicated jig assemblies requiring irregularly shaped tools. Application does not require heat. Bushings placed in holes drilled 0.015 in. oversize and set with the new adhesive provide a push-out load greater than that required to unseat a press fit.

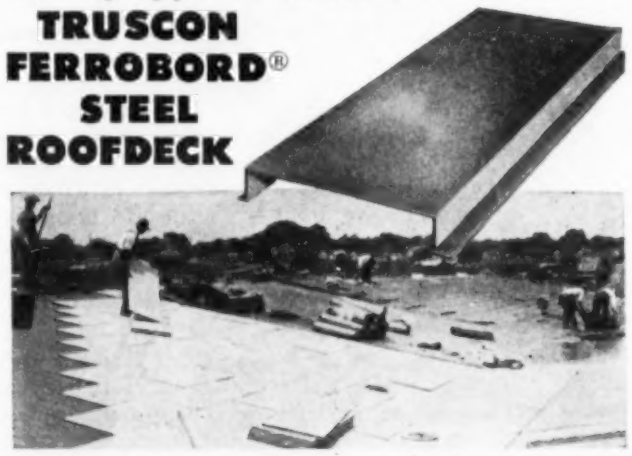
Application starts with the drilled hole and the bushing with acetone, carbon tetrachloride or a similar solvent. This is followed by mixing equal parts of the cement and a catalyst, that is supplied for this purpose, to make a small supply on a piece of paper. Next a coat of the adhesive is spread on the outer surface of the bushing and in the drilled hole. Finally the bushing is inserted in the hole on a pin engaged in a master jig. The adhesive sets ready for use after a 12-hr. interval.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 41

For Quick, Permanent Roofing *on any type of structure*

TRUSCON FERROBORD® STEEL ROOFDECK



This strong, lightweight, steel roofdeck can be applied to any flat, pitched or curved roof structure. Large areas can be covered quickly. The members are so designed and formed that each unit firmly interlocks with the adjoining unit along the full length, achieving the maximum in lateral distribution of concentrated loadings. The members are fabricated in units long enough to span over three or more purlin spacings.

Ferrobord is manufactured from both 20-gage and 18-gage copper-bearing strip steel. Each unit is 6 inches wide and has a depth of either 1½" or 1¾". WRITE FOR FREE BOOKLET!

TRUSCON MARK OF MERIT PRODUCTS

TRUSCON® STEEL DIVISION
REPUBLIC STEEL CORPORATION
1094 ALBERT STREET • YOUNGSTOWN 1, OHIO

If you write maker identify as IEN - 42

"it's easy to bend"

a new practical 32 Page di-acro **BENDING MANUAL**

by the originators of "Die-less Duplicating"

This instructive and authoritative booklet will quickly prove itself indispensable wherever bending is done or is needed. It brings you a veritable gold mine of tested, authentic bending methods applicable to any rotary type bender. The proper bending technique may frequently offer a new approach to an old problem by simplifying product design and cutting production costs.

The exact methods of producing various types of bends in a wide range of materials are illustrated, step by step, with over 90 diagrams and charts together with valuable tooling suggestions.

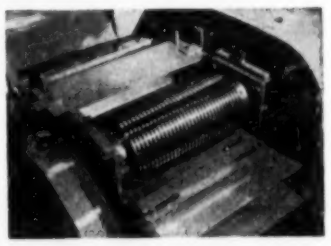
You'll want a copy . . . Mail your request today.

di-acro PRECISION MACHINES DIE-LESS DUPLICATING

O'NEIL-IRWIN 318 8th Ave. Lake City, Minn.

If you write maker identify as IEN - 43

No Dust When You Dice Plastics with a TAYLOR-STILES CUTTER



• There's no dust around your plant when you dice plastic sheets on a Taylor-Stiles plastic cutter.

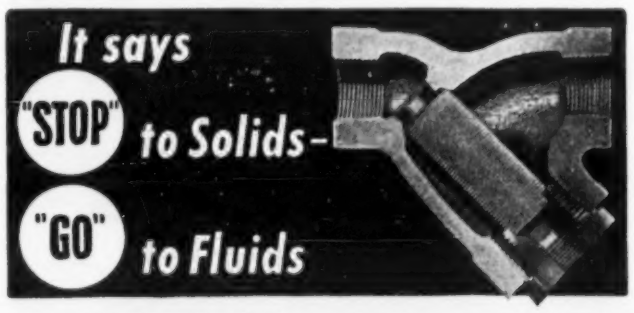
• Taylor-Stiles cutters cut and cross-cut sheets of plastic stock in a single operation, to any desired particle size without fines. Cuttings are uniform in size and shape. There is no dust.

TAYLOR-STILES and Company CUTTING MACHINES & KNIVES

Write for full facts

44 Bridge Street
RIEGELSVILLE, NEW JERSEY

If you write maker identify as IEN - 44



Here is a BETTER Strainer to "police your pipelines"

• **FIRST**—*The Screen,* a high-grade, woven Monel wire basket that catches solids—lets condensate, oil or other fluids flow freely.

• **SECOND**—*Finish.* Cadmium plated inside and out for protection against corrosion.

• **THIRD**—*Easily Cleaned.* Blow-off bushing made for easy removal. Bushing and Screen come out together. Screen automatically aligns on reassembly.

• **THOUSANDS IN SERVICE**—Sold by over 200 Mill Supply Houses. 6 sizes from ½" to 2" for pressures up to 600 lb. Reasonably priced.

See your supply house or write for Bulletin S-203.

YARNALL-WARING COMPANY
122 Mermaid Ave., PHILADELPHIA 18, PA.

YARWAY STRAINERS

If you write maker identify as IEN - 45

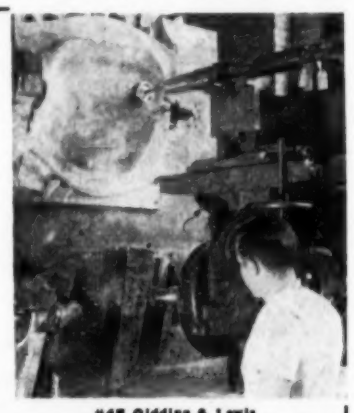
With a valve to suit the job air cylinders can be made to work wonders. Mead Air Valves, Single and Double Acting Air Cylinders, will help you cut costs, speed up work. Write for complete new Catalog of famous Mead air-operated devices!

MEAD SPECIALTIES COMPANY

4114 N. KNOX AVE., DEPT. E-13-A • CHICAGO 41, ILL.

If you write maker identify as IEN - 46

TRACER CONTROLLED MACHINING APPLIED TO MILLING



#45 Gidding & Lewis Duplicating form of propeller blade

Mr. Duplicator says—"There is a hullabaloo being raised about duplicators for milling machines."

WALKER says—"We built the first practical duplicator for a milling machine. We now apply Walker duplicators to every make of machine—vertical—horizontal—or boring—from the largest to the smallest—in 1, 2 & 3 dimension controls. We even put them on Hydrotells, making a true duplicating milling machine at a very nominal cost. Walker duplicators are simple in operation, easy to understand, accurate beyond question, and can be easily disengaged. No relays, switches, air valves or clutches—only simple hydraulics that have been proven in actual operation for 20 years."

WALKER DUPLICATORS have increased production from 3 to 20 times. Write for descriptive folder.

In addition to building duplicators for all sizes of boring mills, milling machines, lathes, planers, shapers, grinders and special purpose machines, WALKER builds duplicators for small machines such as high speed heads.

Send sketch of parts and name of machine for immediate information.

Walker HYDRAULIC DUPLICATOR CO.

P. O. Box 200 STANDISH, MICHIGAN

Pioneer Designers and Builders of Precision Duplicating Equipment

If you write maker identify as IEN - 47

Mecco SAFETY "WEDGE-GRIP"

STEEL TYPE HOLDER

Fast TYPE CHANGE FEATURE

Ideal for use on marking jobs requiring interchangeable type, this unit features a patented Safety Snap for speed and ease in changing type. Made to order in any size, it is made of Mecco Safety Steel to prevent spalling and mushrooming.

Write for Catalog 100

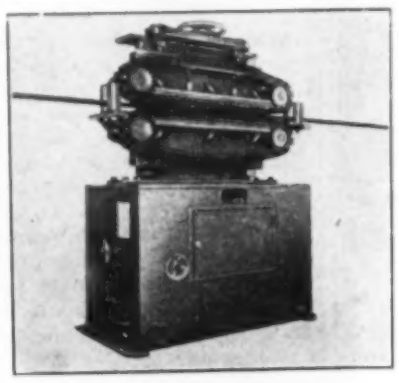
M.E. CUNNINGHAM CO. SAFETY STEEL STAMPS

1039 Chateau Street • Pittsburgh 33, Pa.

If you write maker identify as IEN - 48

WINDING . . Pullout machine for use at wire stranders, cablers

Source: JAMES L. ENTWISTLE CO.
1473-77 Elmwood St., Providence 7, R. I.



Drive is in base

Caterpuller is a new traction tread machine, originally developed in Switzerland, to replace capstan type pullout equipment at wire stranders and cablers. It is now available through the company in the United States. Horizontal pull is imparted to a cable as it passes between two traction treads consisting of a series of individual blocks made of synthetic tire stock material to grip the wire.

Upper and lower treads are power driven by roller chain and sprocket connection to a common drive shaft. The treads are adjustable vertically by means of a hand crank for various cable diameters and to regulate the clamping action.

If you write maker identify as IEN - 49

FLOORS . . Mastic material surfaces concrete or wood, old or new

Source: MAINTENANCE ENGINEERING CO.
14-18 W. Johnson St., Philadelphia 44, Pa.

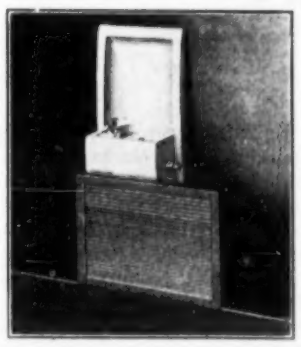
In drums ready to use

Numastik Bond is a new heavy duty mastic material, resistant to oil, grease and acids. It is designed for use as a surfacing material, about ½ in. in thickness, over old or new concrete or wood floors subject to constant traffic and heavy loading. It can be filled into holes or ruts and used both indoors and outside.

If you write maker identify as IEN - 50

COOLING . . Drinking fountain mounts in wall above cooling unit

Source: CRANE CO.
834-38 So. Michigan Ave., Chicago 5, Ill.



Saves floor space

New combination of the company's Filtrine Wal-Pak motor driven cooling unit and one of the company's standard wall type drinking fountains is shown in the illustration. The cooling equipment is accessible back of a louvered panel flush with the wall surface. The line includes models for one or two fountains. It chills sufficient water for 50 persons per hour per fountain.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 51

Minimize Manual Movement

How many times do you "pick it up — and lay it down?" That is what costs money as your product moves through manufacturing, assembly, packing, warehousing and shipping. Let Logan equipment do your moving. Frequently work can be performed enroute, without removal from the conveyor. And "don't forget the extras you get" in Logan engineering and design. Write today for literature.

Logan Conveyors

LOGAN CO., 276 CABEL ST., LOUISVILLE, KY.

If you write maker identify as IEN - 52

• Thermohms are L&N electrical resistance thermometers used with Speedomax or Micromax instruments for measuring temperatures to 1000 F.

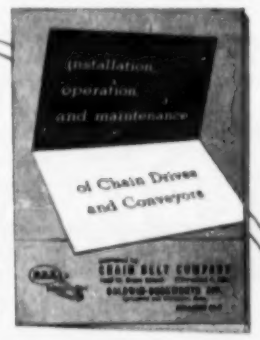
Even at 500 F, the Thermohm-instrument team is 4 or 5 degrees more accurate than the Thermocouple-instrument team, and retains its full sensitivity and accuracy far longer than bulb instruments do. Thermohms are installed in the same general way as the other temperature detectors.

This new 33 page catalog describes the many uses and special features of the Thermohm and gives specifications. It's free on request . . . just write for catalog EN-S4, to our nearest office, or to 4905 Stenton Ave., Phila. 44, Penna.

LEEDS NORTHRUP
instruments automatic controls furnaces

If you write maker identify as IEN - 53

Longer Life for Chains and Sprockets!



this book tells you how

Here's a pocket-sized handbook that's packed with valuable tips on chain and sprocket maintenance. There are chapters on installation, lubrication, operation, repair and storage as well as a number of helpful sketches and charts. It's a book that saves you important money. Send for as many copies as your organization can use.

REX BALDWIN-REX

CHAIN BELT COMPANY
358 Plainfield Street
Springfield 2, Massachusetts
53-500

Please send me.....copies of Bulletin 51-7.

Name.....

Company.....Dept.....

Address.....

City.....State.....

If you write maker identify as IEN - 54

BLAW-KNOX STEEL GRATING in the Front Rank of Industry ON ALL 5 COUNTS

OPEN SPACE • STRENGTH
LONG LIFE • CLEANNESS
SAFETY

Blaw-Knox Steel Grating is electroforged into rigid, one-piece panels, using twisted cross bars for firm footing. Bring your open steel flooring problems to Blaw-Knox for expert help. Bulletin 2365 sent on request.

BLAW-KNOX DIVISION
OF BLAW-KNOX COMPANY
2050 Farmers Bank Bldg.
Pittsburgh 22, Pa.

BLAW-KNOX Electroforged STEEL GRATING

If you write maker identify as **IEN - 55**

This Very Odd-Looking Truck is one of the Handiest Made

THOMAS PRY TRUCK

A tremendous amount of freight can be moved by 2 men with Thomas Pry Trucks. Sharp steel nose slides under load and powerful leverage (5000 lbs. capacity) enables user to raise and move load, or by raising load to place rollers on dollies under it.

Crates and machinery, too heavy or too bulky to handle with anything else manually, can quickly and easily be shifted, stored, loaded or unloaded. 5, 6 or 7-ft. handle lengths.

Write for Free Literature showing other models (4250 and 3500 lb. load capacities).

THOMAS TRUCK & CASTER CO.
300 Mississippi River, Keokuk, Iowa

If you write maker identify as **IEN - 56**

Combine . . . TRICO

"KLIPLOK" CLAMPS
With "Powder-Packed"
RENEWABLE FUSES

The PERFECT combination that insures PEAK PRODUCTION.

"KLIPLOK" CLAMPS

"Lock like a vise and stay put". No chance for faulty contact between fuses and clips. They reduce:—

- Premature Fuse Blowings.
- Unnecessary Shutdowns.
- Lost Production.
- Unnecessary Repairs.

Get the Complete Story WRITE FOR BUL. 1 & 6

TRICO "Powder-Packed" **RENEWABLE FUSES**

The ONLY renewable fuse with a CUSTOM-BUILT "Powder-Packed" renewal element that provides:—

- Three Times the Fuse Service.
- Low Resistance Contacts.
- Tamper-proof Protection.
- Guaranteed SAFE Time-lag.
- Life-time Outer Parts.

TRICO FUSE MFG. CO. MILWAUKEE, WIS.

If you write maker identify as **IEN - 57**

CRANE WHEELS AND WHEEL ASSEMBLIES

INSTALL THESE WHEEL ASSEMBLIES complete with axles, bearings, drive gears, grease fittings and all necessary parts for a complete installation. There are sizes, types, and styles of mounting to suit every requirement.

DOUBLE FLANGED WHEELS range in standard tread diameters from 7½" to 24"; SINGLE FLANGED WHEELS from 4" to 8". Wheels are available unmounted or in completely assembled units.

WRITE FOR CATALOG Complete line of Downs Crane Wheels and Assemblies are illustrated and described in new Catalog No. 3540. Specifications included. Write today!

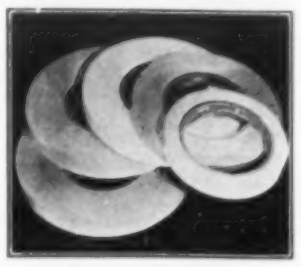
DOWNS CRANE & HOIST CO.
MECHANICAL ENGINEERS 540 W. VERNON AVENUE LOS ANGELES 37, CALIF.

Electric Cranes • Hand Cranes • Jib Cranes • Sheaves • Sheave Blocks • Plate Grips • Plate Hooks • Crane Trolley Hoists • Crane Wheels • Crane End Truck Units • Jib Crane Fittings • Automatic Mechanical Load Brake Crane Hook Blocks

If you write maker identify as **IEN - 58**

INSULATING . . Electrical tapes employ thermosetting adhesive faces

Source: INDUSTRIAL TAPE CORP.
Highway One, New Brunswick, N. J.



Details on request

White acetate cloth, acetate fiber, orange-yellow polyester film, yellow flatback paper and yellow crepe paper are employed as the backings for five new electrical tapes. Each tape has particular characteristics for given applications. In all cases the adhesive facing cures at 250 to 300 deg. F. When the maximum temperature is applied the curing interval is about an hour. Packaging is in 36 to 60-yd. rolls depending on the type. Width ranges from ⅛ to 4 inches.

If you write maker identify as **IEN - 59**

FABRIC . . Vinyl upholstery, elastic fabric backing, two patterns

Source: UNITED STATES RUBBER CO.
1230 Sixth Ave., New York 20, N. Y.

Excellent for furniture

Elastic Naugahyde with tough fabric backing is now in production in a new line of lightweight decorative vinyl upholstery. Two decorative patterns include tweed and gold thread, the former an authentic reproduction of tweed with a three dimensional effect in nine colors. The gold thread textured pattern is in 12 colors. Both patterns are available in 30 yd. rolls measuring 50 in. in width.

The clear coating, color and pattern are applied by a new transfer cast vinyl coating method so both color and pattern are fused beneath the clear vinyl top surface. Thickness is 25 gage. A dry slip finish promotes seating comfort.

The material stretches around curves and contours. It can be blind stitched, tacked and sewed like soft fabric. Cleaning is with soap and water. The stretchable fabric backing makes the material resistant to tearing and splitting.

If you write maker identify as **IEN - 60**

SNOW PLOW . . Engine driven, gathers and throws snow to one side

Source: TRI D ENGINEERING & MFG. CO.
12 Rock St., Rock Island, Ill.

Snow Mate

Gasoline engine, rating 2½ hp., drives a rotating blower and also propels this new snow plow. It will cut a path 24 in. in width and will throw the snow in desired direction as far as 30 ft. by adjusting the discharge chute tip. The operator walks at the rear where he controls the engine and steers the machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 61**

If you write maker identify as **IEN - 62**

THERE IS NO SUBSTITUTE FOR EXACT WEIGHT

Manual Packaging . . .

While mechanization with fully automatic equipment is the desired packaging operation there are many products which cannot be so handled. This is due to diversity of products, volume involved, orders to be filled and lastly the type of the commodity. If you have products of this nature accept the facts. Solve your problem with skillful coordination of time and motion study of highly trained personnel and special production line equipment to fit the job. From the equipment standpoint your efficiency can be materially increased with EXACT WEIGHT Scales for checking manually packaged containers. Today thousands of these famous scales are at work in this type of work. They are your best cost control measure in hand packaging operations. Write for unit scale details to fit your manual operations.

EXACT WEIGHT SCALE Model No. 273 for counting, testing, production line check-weighing. Features end-tower construction, speed of operation—Capacity 12 lbs.

EXACT WEIGHT SCALES

BETTER QUALITY CONTROL
BETTER COST CONTROL

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

If you write maker identify as **IEN - 63**

MARMAN clamps — Solve Difficult Hose, Duct, or Tube Fastening Problems!

Marman has engineered a series of standard clamps that will fit most all applications regardless of their specialized or exacting nature. You can save time and money with Marman Clamps because they go on fast, hold tight, and seal positively.

MARMAN UNIVERSAL CLAMPS
provide quick installation and a wide range of adjustment. They can be used over and over again.

MARMAN T-BOLT CLAMPS
give extra strength with an even circumferential take-up which assures an efficient seal.

MARMAN QUICK COUPLER CLAMPS
have a patented quick opening tension bolt. They are especially designed for installations that require frequent removal for cleaning or maintenance.

Marman Clamps are made from corrosion-resistant stainless steel and are available in various standard widths and diameters. All Marman T-Bolt and Quick Coupler Clamps are supplied with AN365 nuts unless otherwise specified. Whatever your hose, duct or tube fastening problem, Marman Clamps can solve it better, faster and easier.

WRITE DEPT. I-1 for more information about Marman Clamps

MARMAN PRODUCTS CO., INC.
940 WEST FLORENCE AVENUE
INGLEWOOD, CALIFORNIA

If you write maker identify as **IEN - 64**

FOLEY FILED SAWS Pay big dividends . . . . . HERE!

Only the best saw sharpening can give you top-speed production. The Foley Saw Filer quickly puts old saws with dull and irregular teeth back in perfect condition — and keeps them perfect! 25% to 40% increase in production is frequently realized with Foley-filed saws.

ONE machine files crosscut circular saws, band saws, hand saws.

30 DAY TRIAL OFFER
permits you to use a Foley Saw Filer in your own shop. You can't lose on this offer—write or send coupon.

FOLEY Automatic SAW FILER

FOLEY MFG. CO. 3369 N. E. Fifth Street Minneapolis 18, Minnesota
Please send literature, and details of your 30-DAY TRIAL OFFER.
Name .....
Address .....

If you write maker identify as IEN - 65

SAVINGS AS HIGH AS 50%
MADE WITH THIS P-K SCREW
It's the "one operation" fastener

SIMPLE
Hammered or Pressed into Plain Holes

SPEEDY
No Tapping
No Mold-Complicating Inserts

STRONG
Tamper-Proof Permanent Fastening

P-K TYPE "U"
Hardened
METALLIC DRIVE SCREW
For permanent fastenings in castings, heavy sheet metal, plastics. One of many types. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say —
IF IT'S P-K® . . . IT'S O.K. — THE *ORIGINAL*
PARKER-KALON® SELF-TAPPING SCREWS
AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

If you write maker identify as IEN - 66

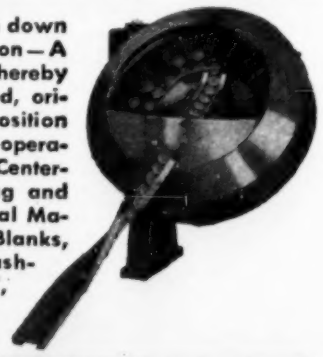
It's **PRODUCTION** *Today*
Speed! More Speed! Is the Call—

—AND THESE MODERN POWER-DRIVEN ASSEMBLING MACHINES WILL DO THE JOB FOR YOU AT A REMARKABLE TIME AND LABOR-SAVING PACE.

The D.P.S. line of Power Screwdrivers, Motorized Hoppers, Nut Drivers and other power-driven equipment has proved an absolute necessity in the present-day program of production assembling. In replacing slow, expensive hand methods in thousands of plants, they are now intrenched as an indispensable aid in meeting urgent calendar requirements—WRITE US, send sample assembly, receive our catalog, and we shall gladly offer suggestions so that you, too, may profit by the use of D.P.S. equipment.

DPS POWER SCREWDRIVERS
DRIVE SCREWS AS FAST AS ONE A SECOND
All types of screws: Machine screws, sheet metal screws, self-tapping screws, with standard round, flat, binder, fillister or hex heads and special heads. No marring of heads or stripping threads; all screws driven to uniform tension. Hopper fed, SCREWS ALWAYS IN SIGHT OF OPERATOR, 3 models.

***Motorized* HOPPER UNITS**



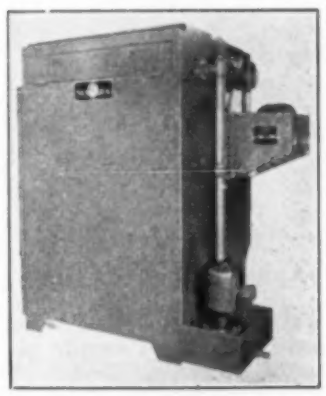
Picks them up and lays them down in exactly the right position—A selective feeding device whereby production parts are selected, oriented and fed in a given position for primary and secondary operations. Adaptable to Presses, Centerless Grinders, Thread Rolling and Slotting Machines and Special Machines. Feeds Screws, Screw Blanks, Rivets, Pins, Nuts, Discs, Washers, Steel Balls, etc. 6 sizes, 8", 10", 12", 16", 24" and 30" diameters.

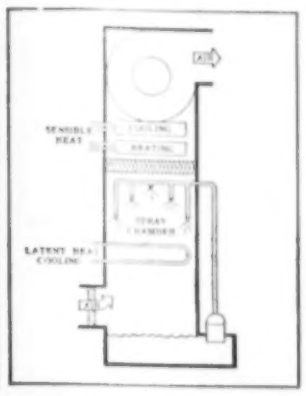
DETROIT POWER SCREWDRIVER CO.
2815 W. FORT ST. DETROIT 16, MICH.

If you write maker identify as IEN - 68

AIR CONDITIONING . . Dehumidifier removes or adds moisture to air

Source: NIAGARA BLOWER CO.
3117 Chrysler Bldg., New York 17, N. Y.





Built for specified requirements

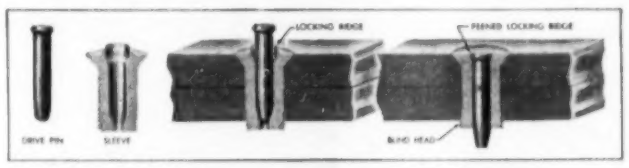
Fresh air is drawn in through a filter near the base of this new conditioning equipment to enter a spray chamber filled with Hygrol mist. The spray either adds moisture or removes it, depending on the temperature and absorbent concentration of the Hygrol. The conditioned air continues upward through an eliminator and then through heating and cooling coils that act interchangeably for delivery of a stream of air at desired temperature and moisture content.

This air is particularly suited for protection, processing or drying of moisture sensitive materials, testing materials and to condition air in operating departments and offices. The Hygrol liquid is kept in correct condition by means of additional apparatus, previously described IEN-6681-52. While it is in operation in the new conditioner, it is circulated by a motor driven pump from its holding tank at the base of the conditioner housing.

If you write maker identify as IEN - 69

FASTENING . . Drive pin rivet requires access to only one work side

Source: HUCK MFG. CO.
2478-82 Bellevue Ave., Detroit 7, Mich.



Samples, prices and literature upon request

The company announces its new position as exclusive distributor, in the United States and Canada, for the Deutsch drive pin blind rivet. The two-part unit was formerly known as the Barker blind rivet and is being manufactured under license from North American Aviation, Inc. Two designs include flush and protruding heads. Four sizes measure $\frac{3}{16}$ to $\frac{3}{8}$ in. with length as specified.

The sleeve is entered into a prepared hole in the work and the drive pin is inserted through the sleeve hole. When it is driven into place it expands the shank end to form a blind head. At the same time, the pin head enters the sleeve head to seating position. A locking ridge, integral with the sleeve, is peened to hold the pin permanently in place.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 70

Group of RUEMELIN Fume Collectors Keeps Shop Clear of Welding Fumes

This well ventilated welding department is typical of hundreds of similar installations. Welding operators appreciate smoke and gas-free atmosphere. Thousands in service. Many repeat orders. Collecting fumes at the source with local exhaust hoods has proven most practical in operation. It is particularly helpful in winter months when doors and windows are closed. Write for Bulletin 37-D describing all types of Ruemelin Fume Collectors.

RUEMELIN MFG. CO.
3863 N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

If you write maker identify as IEN - 71

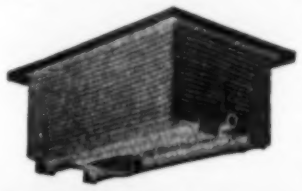
HERE'S *Safe, Uniform* HEAT FOR MELTING COMPOUNDS

Two views showing how heating element completely surrounds Sta-Warm tank walls and bottom areas.

Sta-Warm electric heat is safe for melting compounds because it is uniform heat, evenly distributed around entire sidewall and bottom area of the tank or pot, with low BTU's per square inch.

Yet it is fast heat . . . faster than concentrated heat . . . because entire contents of the batch are brought up to proper temperature uniformly. There are no cold lumps as well as no burned or carbonized material when Sta-Warm heating tanks are on the job.

What is this efficiently engineered heat worth to you? You don't pay a premium for it because it's actually cheaper in the long run . . . pays off daily in regularity of production output, long life and low maintenance in the Sta-Warm tank itself, lower current demand and all 'round satisfaction.

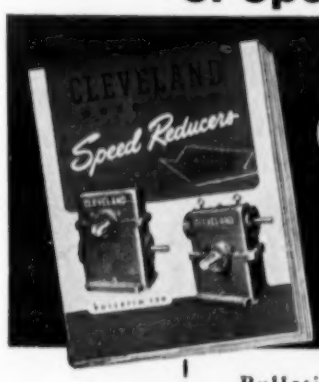


If you heat compounds, inquire today, outlining your applications.

Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

If you write maker identify as IEN - 72

Calling all users of Speed Reducers!



Get the new Cleveland Book FREE

Bulletin 130 gives rating tables, dimensions and other data you need in selecting the right sizes in standard worm-gear speed reducers. Ask for your copy.

New bulletins on other types of Cleveland worm gear drives and worm-gear sets also available. Outline your needs. The Cleveland Worm & Gear Co., 3258 E. 80th St., Cleveland 4, Ohio.

CLEVELAND
Worm Gear
Speed Reducers

If you write maker identify as IEN - 73

NEED COPIES?

MODERN MIMEOGRAPHING—New equipment and supplies for the fast production of copies on a wide variety of paper and card stocks. A. B. Dick mimeograph products are for use with all makes of suitable stencil duplicating products.

MODERN OFFSET—A. B. Dick lithograph direct image plates and masters provide for (1) longer runs with sharp definition—(2) easier corrections—(3) more successful filing—(4) marked superiority in resistance to fingerprints.

MODERN SPIRIT DUPLICATING—A. B. Dick CLEEN-SEAL master sets and spirit carbons guard against stains and smudges. Available in a variety of sizes for long, medium and short runs. Five brilliant colors—purple, red, green, blue and black.

Write Dept. IEN 153 for full information—or call the A. B. Dick Distributor listed in the classified section of the phone book.

A. B. DICK
A. B. Dick Company • 5700 Touhy Avenue • Chicago 31, Illinois

If you write maker identify as IEN - 74

PINES END-FINISHING MACHINES

Handle broad range of rod, tube, and pipe end-finishing work with speed and precision. Exclusive chuck feature clamps and feeds work to cutters in one motion. Operator always has one hand free for stock handling. Designed with quick interchangeable tool holders and chuck inserts, 6-speed sheave — 760 to 3920 r.p.m., hardened and ground spindle, grease-sealed precision bearings. Automatic swing-type stock stop assures fast, accurate positioning. Entire unit is portable, takes up small space, handles stock diameters up to 2". Max. feed is 1¼". Larger sizes up to 5" capacity available. **Typical production:** 800 tube ends per hour.

(Above) Pines 2" High Production End-Finishing Machine equipped with foot-controlled air operating cylinder. Clamp, feed, and return cycle is automatic. Operator has both hands free for stock handling. Supplied similar to hand-operated unit.

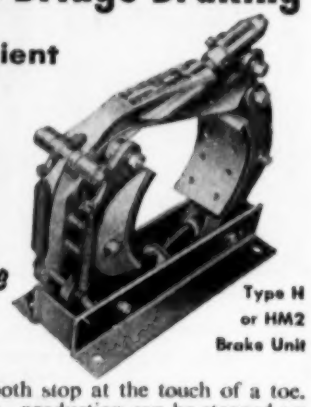
Write for Free Bulletin
Write today for free bulletin and learn how these machines are built to save time on a wide range of work.

PINES ENGINEERING CO., Inc.
Specialists in Tube Fabricating Equipment
430 WALNUT • AURORA, ILLINOIS

If you write maker identify as IEN - 75

Now... Wagner Powered Hydraulic Crane Bridge Braking

for safer, more efficient Crane operation.



Type H or HM2 Brake Unit

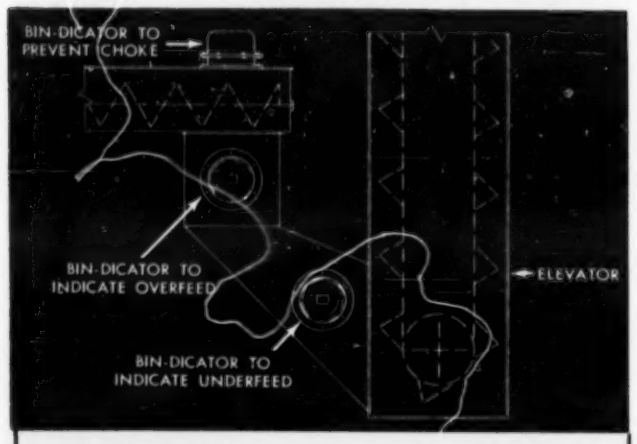
...More Torque
...Greater Capacity
...Less Operator Fatigue

These new *Powered* Hydraulic Crane Bridge Brakes mean that your operators can bring even the largest crane to a safe, smooth stop at the touch of a toe. Loads can be spotted accurately—production can be stepped up—several brakes can be operated from one pedal—*all with less operator fatigue*!

Wagner Powered Hydraulic Braking Systems are designed for applications where frequent starts and stops are necessary... where close spotting is used... where large heavy equipment is involved... and for applications where exceptional ease of brake operation is desired. Write for Bulletin IU-36.

Wagner Electric Corporation EST. 1891
152-3A
6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.
ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

If you write maker identify as IEN - 76



CHOKE-UPS!

IN CONVEYORS and ELEVATOR LEGS
damage equipment—waste materials cause lost time—start fires

PREVENT SUCH LOSSES with BIN-DICATOR, a diaphragm operated switch

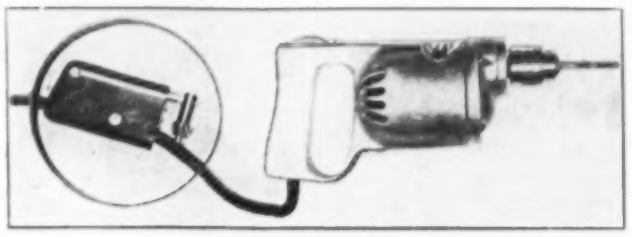
Free catalog describes applications, gives details and dimensions of models with numerous wiring diagrams.

THE BIN-DICATOR COMPANY
13946-B Kercheval Avenue • Detroit 15, Michigan

If you write maker identify as IEN - 77

SWITCH . . Normally open line unit closes on inserting chuck key handle

Source: TRICOP DISTRIBUTING CORP.
306-10 W. Center St., Akron 2, Ohio



Requires key for spindle operation

Tricop trade names a new switch for installation in the power line to a drilling machine or portable electric tool equipped with a key operated chuck. The circuit through the switch stands normally open. It is closed when the chuck key handle is inserted. The arrangement makes it impossible to start the machine or tool spindle with the key in any position but in the switch. It prevents the key from being lost. It protects the operator while he is opening or closing the chuck.

If you write maker identify as IEN - 78

SOLDERING . . Paste material contains solder and flux ready to use

Source: EUTECTIC WELDING ALLOYS CORP.
40-42 172nd St., Dept. P, Flushing 58, N. Y.

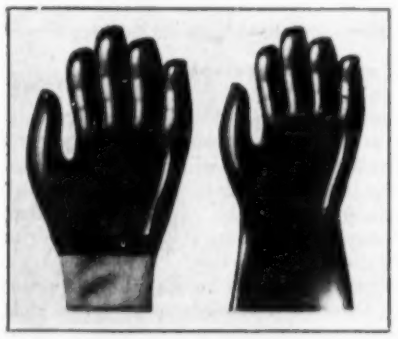
Clean and efficient

Eutec-Tinweld is a new combination of solder and flux for use with a torch, a furnace or a soldering iron to join any metals except aluminum and magnesium. Work parts can be dipped into the paste and then heated to joint them securely. Application can be made with a brush. The solder content in the paste is a lead tin base. Any flux remaining after the operation has been completed, will wash off in plain water.

If you write maker identify as IEN - 79

PROTECTING . . Coated fabric glove, resistant to acid, grease, abrasion

Source: EDMONT MFG. CO.
1226 Walnut St., Coshocton, Ohio



No. 909 and No. 922

Good grip and flexibility characterize the company's new Neox coated fabric work glove in which neoprene, containing additives, is employed as a coating medium. Two typical designs are shown in the illustration. The range of styles extends from knitted wrists to 14-in. gauntlets with the coating overall or confined to the palm to meet a variety of conditions.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

If you write maker identify as IEN - 80

SEND FOR YOUR **FREE COPY** → **NEW ACME BUSHING CATALOG**

Contains America's **LARGEST BUSHING Selection**

Features **2** Standards
A.S.A. Standard *Plus* Acme Standard

Makes Bushing Procurement Easy... Fast! Send For Your FREE Copy Now!

Simplifies, speeds bushing selection. Packed with valuable data. Saves you time and trouble. Also includes liners, leader pins, dowel pins, locating jigs, etc.

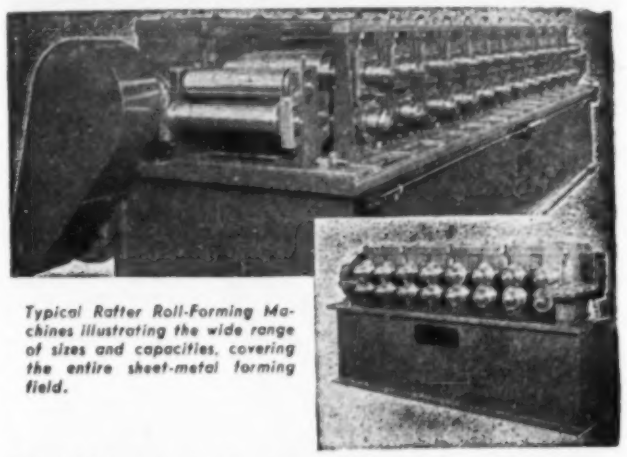
Serving Industry For 28 Years

ACME INDUSTRIAL COMPANY
215 N. Laflin St., Chicago 7, Illinois
MANUFACTURERS OF DRILL JIG AND FIXTURE BUSHINGS

If you write maker identify as IEN - 81

RAFTER COLD METAL ROLL-FORMING MACHINES

Correct Design for Maximum Efficiency



Typical Rafter Roll-Forming Machines illustrating the wide range of sizes and capacities, covering the entire sheet-metal forming field.

Patented balanced gear drive mounted on roller bearings distributes power efficiently to each pair of rolls... Gear ratio is a continuous reduction from drive shaft to roll shaft, quiet, efficient and compact. This drive consumes less power than any other type... Exclusive design permits greatest vertical adjustment of the upper roll spindles, without the aid of square gearing or small complicated gears... Design permits quickest and most accurate change of rolls possible. Shafts always remain parallel. Adjusting screws connect front and rear bearings... Low power consumption, lasting accuracy, longer roll life, and higher output are made possible by these and many other features.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street • Belleville 9, N. J.
GANG SLITTERS and PRESS BRAKE DIES

If you write maker identify as IEN - 82

Production Soldering BETTER JOBS FASTER more Economically

Save Labor, Solder . . . Increase Production

This new MOGUL unit is built to deposit silver, lead, and tin base solders in a liquid or semi-liquid form... faster, cleaner... to any constant moving part. This new automatic soldering gun replaces the soldering bath, hand soldering, and in many cases, expensive fixtures. Quickly adapted to various size parts. Adjustable to speed of work... gives pin-point location for cleaner seams.

BETTER WORK APPEARANCE

Deposits solder or brazing wire to the exact spot for cleaner seams. This new MOGUL soldering gun is now in wide use, saving time and money, increasing production, and turning out a better-looking product.

Write today for new MOGUL SOLDERING GUN bulletin

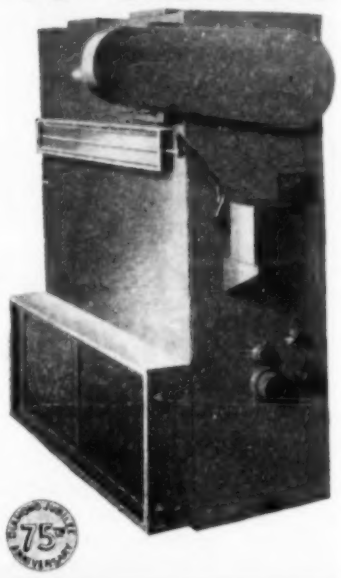
METALLIZING COMPANY OF AMERICA
Dept. IEN • 3520 West Carroll Avenue
Chicago 24, Illinois
Telephone: SAcramento 2-3710

If you write maker identify as IEN - 84

The *Practical Answer* to Your AIR CONDITIONING Needs!

"Buffalo"

"PC" CABINETS



Here are practical, proven units to control your temperature and humidity—and keep clean air circulating — both for product and process control, and for comfort! "PC" Cabinets are compact and demountable — simple to operate and maintain. And best of all, they're quality-built *permanent* units with dependable "Buffalo" Pumps and Fans and heavy-gauge casings—not flimsy units built for token service. Looking for facts? Write for Bulletin 5703A.

BUFFALO FORGE COMPANY
496 Broadway, Buffalo, N. Y.
Publishers of "FAN ENGINEERING" HANDBOOK
Canadian Blower & Forge Co., Ltd., Kitchener, Ontario
Sales Representatives in all Principal Cities

If you write maker identify as IEN - 85

GET ALL 3 with ALL-METAL

CHROMALOX RADIANT HEATERS

Uniform heat at the turn of a dial is yours with Chromalox Electric Radiant Heaters. Fingertip control assures exact operating temperatures for varying needs. Different zones of heat can be had within the same oven by setting up individual controls for each bank of heaters. Chromalox Units operate in low and high ambient temperatures; provide glareless radiation in infrared wave lengths absorbed efficiently by all colors, textures, surfaces. All-metal construction withstands shock, vibration, moisture; eliminates contamination; is safe with volatiles.

TYPICAL TIME and MONEY SAVING USES
- Drying
- Dehydrating
- Baking
- Pre-Heating
- Heating
- Degreasing

and many other applications

For More Know-How Send for Application Reports on Chromalox Radiant Heaters

EDWIN L. WIEGAND CO., 7505 THOMAS BOULEVARD, PITTSBURGH 8, PA.
See Chromalox Electric Strip Heaters Advertisement, Page 5

CHROMALOX IB-10

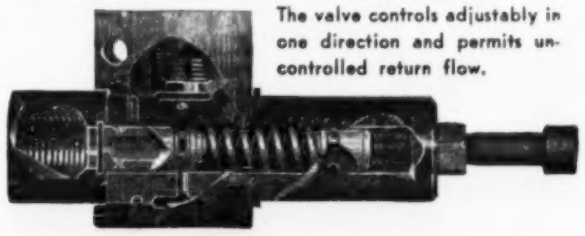
ELECTRIC HEAT FOR MODERN INDUSTRY

If you write maker identify as IEN - 86

An Adjustable

FLOW REGULATOR

This newly perfected adjustable Flow Regulator holds at a constant rate even though the pressure fluctuates.



The valve controls adjustably in one direction and permits uncontrolled return flow.

The spring back piston in the housing is mounted in front of the adjustable screw. It carries a calibrated orifice; operates axially on change in inlet pressure so as to increase the throttling action.

Four sizes, 1/4, 3/8, 1/2, and 3/4 inch. Overall length 4 1/2 to 7 1/2 inches. Adjustable over a 50% flow range. Maximum pressure is 3000 pounds.

Write for illustrated circular C

WATERMAN ENGINEERING Company
725 CUSTER AVENUE
EVANSTON, ILLINOIS

If you write maker identify as IEN - 87

GAGE . . Optical instrument reads deviation in surface squareness

Source: ENGIS EQUIPMENT CO.
429-33 S. Dearborn St., Chicago 5, Ill.

Reads tilt angle

Angle Dekkor is a new optical instrument employing light reflection to read deviation from squareness of holes to a reference surface, of parallelism between two or more bores or planes. Applications include production inspection of products such as ball bearings, piston rings, seals requiring highly accurate parallelism. The instrument differs from a contour projector in that it reflects an image of a built-in scale or graticule and does not show the image of the outline or surface of the object being tested by the unit.

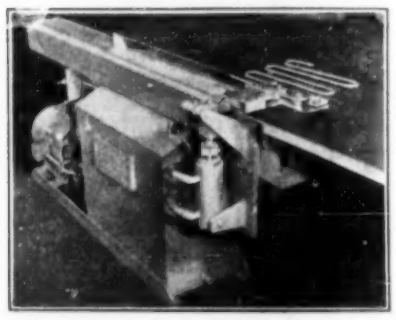
A bundle of parallel light rays is produced in the instrument to fall upon a flat reflecting surface for return parallel to their original direction, if the surface is square. If it is tilted, the rays are returned at an angle precisely twice the angle of tilt of the mirror to the original rays. This angle can be read on the graticule to determine deviation to 20 sec. of arc.

Work to be tested mounts on a surface plate measuring 8 by 15 inches. The instrument itself measures 28 in. in height. Suitable reflectors are available for given work pieces. List price of the basic instrument is $1,080.

If you write maker identify as IEN - 88

BENDING . . Hydraulic machine to produce serpentine tube coils

Source: PINES ENGINEERING CO.
638 Walnut St., Aurora, Ill.



Single lever control

Steel tube, to 1 in. in outside diameter, 16 gage and to 5 ft. in length, is positioned in a stationary clamp in this new machine. It is held by hydraulic pressure while a wiping shoe is rotated around a stationary bending mandrel. This operation makes the first bend of several in a serpentine coil.

Reversing the hand control lever returns the shoe to its initial position and opens the clamp so the pipe can be rotated while still between the clamp jaws through a 180-deg. arc. The lever is again operated to clamp and make the next bend. This is repeated until the coil is complete. The machine will make about 450 bends per hour.

Power is supplied by a Vickers self-contained Power Pack which includes a reservoir and 7-gpm. hydraulic pump driven by a 3-hp. motor. The pump operates at 1,000-lb. pressure to provide a bending speed of 29 rpm. The machine stands 35 in. above the floor. Overall base dimensions are 74 1/2 by 15 inches. List price with tooling is about $3,500.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 89

NEW MASKING METHOD

for SPRAY PAINTING • PLATING • SAND BLASTING

PRE-CUT SELF-STICKING **QUIK-MASKS**

Hundreds of plants now using Brady QUIK-MASKS are saving time and money **by completely eliminating** costly hand work, use of stop-off materials and metal shields. QUIK-MASKS are **pre-cut to the exact size and shape you need.** Protect name plates, machined parts, plated and polished sections, holes, threads, etc., from paint, plating and cleaning solutions, oils, acids and sand blasting.

QUIK-MASKS are pre-cut from special "SCOTCH" brand plating and masking tapes. They stick without moistening—are quickly applied and removed. Circles, squares, rectangles, hexagons, letters and numerals stocked in many sizes. Nameplates and other specials made to your exact requirements.

FREE SAMPLES

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
756 W. Glendale Ave., Milwaukee 12, Wis.

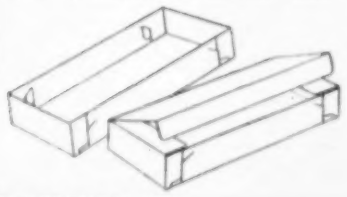
If you write maker identify as IEN - 90

Your Cartons Cost Less . . . When YOU Make Them!

Tray-Lock Model A
For large trays and hinge-cover cartons, a Model B is available.

Make your own cartons—to your specifications—on a Tray-Lock Carton Former . . . Using thrifty die-cut blanks, this machine provides large savings over factory-processed or hand-set-up cartons . . . No supervision is needed except for occasional feeding of blanks . . . Speeds range up to 90 cartons per minute

Cartons leave the machine right-side-up, ready for filling. There are no side-weakening scores. Cartons keep their shape—won't jam in the wrapping machine. The Tray-Lock is very easy to adjust for different sizes. Write for complete information or contact our nearest office.



• CARTON DIVISION •

PACKAGE MACHINERY COMPANY
SPRINGFIELD, MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS DENVER LOS ANGELES
SAN FRANCISCO SEATTLE VANCOUVER, WASH. TORONTO MEXICO, D. F.

If you write maker identify as IEN - 91

VITROHM Fixed Resistors 5 to 200 watts.

ADJUSTOHM Adjustable Resistors 10 to 200 watts.

STRIPOHM Resistors for use where space is limited.

HOW FAST DO YOU NEED RESISTORS IN YOUR OPERATING PICTURE?

Quick delivery on VITROHM Wire-Wound Resistors can be made to you on stock values and sizes.

While we realize it is not always practical to use a stock size resistor, and that circuit requirements, as well as space limitations, must be considered, we recommend that you explore the possibility of aligning your tubular resistor requirements with our stock sizes, resistance values, watt ratings, and terminal arrangements.

Complete dimensional data on VITROHM Wire-Wound Resistors is given in our catalog.

Write for Bulletin D-130. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N. Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls Since 1892
RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

If you write maker identify as IEN - 92

How to Build Your Own Overhead Conveyor

This 28-page booklet tells you in detail how to layout your overhead monorail, power conveyor, select all the parts needed and erect it in your plant. All elements are fully illustrated with sizes and capacities given.

WRITE FOR YOUR COPY TODAY

Mechanical Handling *Systems, Inc.*
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities
In Canada: Canadian Mechanical Handling Systems, Ltd.

If you write maker identify as IEN-93

DESIGNED & ENGINEERED with "YOUR LOAD" IN MIND!

DICO STEEL HAND TRUCKS

- "Float-Away" Barrel Trucks
- Combination Truck & Drain Stands
- "E-Z" Rock Drain Stands
- Light weight Utility Trucks
- Railroad Freight Trucks
- Bag and Keg Trucks
- Warehouse Trucks

DICO TRUCKS ELIMINATE FATIGUE!

NEW DICO Series 70B & 80B COMBINATION BOX & BAG TRUCK

FATIGUE LAG COSTS $ $ $!

Easy-Tipping DICO Steel Hand Trucks mean less fatigue for your men. Perfectly balanced to "break a load" easier, faster and with less exertion. DICO Trucks are designed for utmost efficiency and maximum durability . . . designed with YOUR Load in mind!

DICO COMPANY

WRITE FOR NEW TRUCK CATALOG

Let us give you full information and prices on the DICO steel Hand Trucks best suited to fit your particular trucking problem. See your jobber or write

202 S.W. 16th ST., DES MOINES, IOWA

If you write maker identify as IEN-94

KEYNOTES

"When I Say Key-Tite... I Mean Key-Tite!"

The perfect leak-proof sealer for gasket and pipe joint connections . . . on all lines carrying water, gas, low-pressure steam, etc.

Write for FREE Sample today!

SEALS TIGHT... BREAKS RIGHT!

A Product of KEY COMPANY

KEY-TITE WATER PROOF PIPE JOINT COMPOUND

2651 McCasland • East St. Louis, Illinois

If you write maker identify as IEN-95

this book shows you how to Reduce machine noise and vibration 60-85%.

Avoid floor drilling by mounting machines the modern way, without bolts or lag screws.

Reduce maintenance costs by eliminating transmitted vibration which damages machines, floors and buildings.

Save time and money when installing new machinery or repositioning present machinery.

Write today for your free copy of "Why It Pays To Anchor Your Machines With UNISORB."

THE FELTERS COMPANY
208 South Street, Boston 11, Massachusetts

UNISORB® MOUNTINGS are used with our special adhesive. UNISORB is also available precoated with adhesive, for use with machines that do not require shimming.

If you write maker identify as IEN-96

CRANE . . Trucks and travel parts to construct bridge type hand crane

Source: INDUSTRIAL EQUIPMENT CO.
313-17 N. Ada St., Chicago 7, Ill.

Technical data in Bulletin T1152

Direct drive for capacity to 1 ton on a 40-ft. span or 4 ton on a 24-ft. span is shown to the left in the illustration of this new Type-TRHG end truck crane kit. Geared drive for capacity to 2 ton on a 45-ft. span and to 8 ton on a 24-ft. span is shown in a companion kit to the right. Each kit includes the track wheels, bearing equipped end frames and gusset plates to take the user's load carrying crane beam. Also included are the required chain wheels, chain and brackets for travel.

If you write maker identify as IEN-97

CLEANING . . Spray liquid cleans and fog proofs lenses, glasses

Source: INDUSTRIAL PRODUCTS CO.
2801 N. 4th St., Philadelphia 33, Pa.

Flame proof
non-toxic

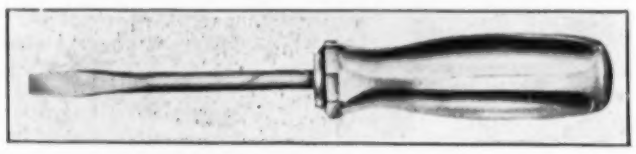
Fog-Free trade names a new spray liquid that is packed in 4-oz. plastic squeeze bottles. A drop of the liquid on a spectacle lens or a quick spray on a larger surface can be spread and wiped dry with a clean cloth or tissue to leave the surface clean and repellent to moisture collection.

The liquid also is available in quart and gallon units to refill dispensers at goggle cleaning stations. A full 4-oz. bottle lists at $1 in single units. A single quart of the liquid is $4. Additional empty squeeze bottles list at 50 cents each.

If you write maker identify as IEN-98

SCREW DRIVING . . Hand tool line, plastic non-roll insulating handle

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angles 54, Calif.



Handles permanently molded in place

Thirteen new screw drivers have been added to the company's line of hand tools. Five are regular type with standard bit and square shank. Eight are cabinet type with straight bit and round shank. Each features a new hand-shaped non-rolling plastic handle molded with depressions to fit the hand and the thumb and forefinger. The octagonal head shape prevents rolling. The screwdriver can be used by a worker with greasy hands as well as one whose hands are clean.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-99

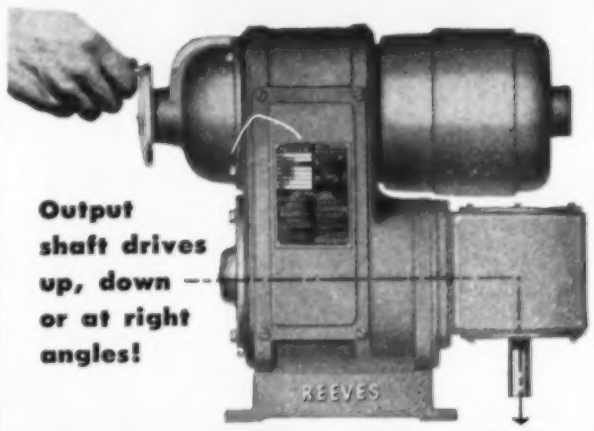
Bulletin 800 Push Buttons

- Standard, heavy duty, or oiltight enclosures
- Hundreds of types and combinations

Double-break, silver-alloy contacts in these rugged push button stations insure long service without failure. An almost endless variety of combinations makes them adaptable to every need. Special buttons, pilot lights, selector switches, etc., available in the same housings to meet your specific needs. Allen-Bradley Co., 1312 S. Second St., Milwaukee 4, Wis.

ALLEN-BRADLEY quality MOTOR CONTROL

If you write maker identify as IEN-100



New! REEVES variable speed Right Angle Drive

Small, compact but *rugged*—the new REEVES RIGHT ANGLE DRIVE! Gives you years of trouble-free performance in right angle or vertical shaft applications. Combines a standard motor, REEVES time-tested speed varying mechanism for positive, accurate speed changes without stops, and the *new* right angle worm gear reducer in *one space saving unit*. Available on all REEVES Fractional hp Motodrives. Write for details to Department IN-85—M-522.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

If you write maker identify as IEN-101

JOHNSON FLEXIBLE METAL HOSE AND FITTINGS for coolants, lubricants, air

WILL "STAY PUT" WHEN BENT TO ANY POSITION

Five sizes 1/8 to 3/4 in. i.d.
Nine lengths 6 to 36 in. with fittings
Made of oil tempered steel

WRITE FOR FURTHER INFORMATION

JOHNSON METAL HOSE, INC.
P. O. Box 952, Waterbury, Conn.

If you write maker identify as IEN-102

Storage Tanks for every need

The cone-roof steel storage tank shown above is one of the many types of storage tanks we build. We also design, fabricate and erect elevated water tanks, reservoirs, pressure storage tanks and heavy steel plate work structures.

Write our nearest office for quotations on any tank or steel plate work you contemplate installing. State type, size, capacity desired and location.

Above: 24,000-barrel Horton cone-roof oil tank at Bakersfield, Calif.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston
Los Angeles • New York • Philadelphia • San Francisco
Seattle • Tulsa • Washington, D. C.
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA

If you write maker identify as IEN - 103

CERROLOW-117 (with Bismuth and Indium)

a non-shrinking casting metal that melts at 117° F.

---what can it do for YOU?

Some Practical Applications

1. Fire alarm fuses for domestic and commercial use. Alarm will sound *before* a sprinkler system goes into action!
2. Thermal fuses to shut off machines or processes in case of harmful or dangerous elevation of temperature.
3. Supporting or nesting delicate parts, preventing distortion or shifting during grinding, milling or other machining operations. Turbine buckets, compressor blades and vanes held in this alloy, after accurate positioning, are ground to very close tolerances.
4. Proof casting molds, dies, gun chambers and fine tapped threads. Low pouring temperature assures absolute minimum expansion of parts and two tenths inch per inch shrinkage affords accurate measurements.

Write for detailed information

CERRO DE PASCO CORPORATION
DEPARTMENT 6
40 WALL STREET • NEW YORK 5, N.Y.

If you write maker identify as IEN - 104

NEW many purpose individual Vulcanaire

DUST COLLECTING UNITS

Use on surface and other grinders where any *kind* of grinding dust must be removed. Salvage diamond dust.

Inexpensive, compact units, with no moving parts.

Operated from your present air supply.

Installed in a few minutes, eliminating need for costly centrally located dust collecting systems.

The collector element is mounted on the side of the machine. Quickly cleaned, requiring no refills.

Vac-suction pick-up device (vacuum nozzle) is mounted on the grinding wheel guard or close to grinding wheel on other applications. *This mounting permits constant contact with dust as the wheel is moved up or down.*

A simple needle valve operates the unit, and can be shut off when machine is not in use.

Available in two sizes: 700 series for grinding wheels 7" dia. or less—200 series for wheels 2" dia. or less.

"SALVAGE INDUSTRIAL DIAMONDS FOR DEFENSE"*

*That is the title of the National Production Authority's booklet which describes the growing critical shortage of industrial diamond supplies.

The shortage will soon result in idle machine tools, and lost defense production unless we straightway begin to conserve grinding wheels and salvage diamond dust. The N.P.A. fully and helpfully explains the methods for doing these things.

Request this N.P.A. booklet on your letterhead and Vulcan will be glad to send it to you. You will also receive literature on the versatile Vulcanaire Dust Collector which promotes health in your plant and turns dust into money.

It's made by the makers of Vulcanaire
The jig grinding attachment

Write for these

Vulcan Tool Co.
734 LORAIN STREET • DAYTON 10, OHIO

If you write maker identify as IEN - 106

MELTING . . Indirect arc furnace designed to precision cast alloy steel

Source: DETROIT ELECTRIC FURNACE DIVISION
1050 26th St., Bay City, Mich.

Ask for Bulletin 528

Type 1C is a new assembly of furnace and investment type mold to melt and pour precision castings such as those required in jet engine construction. The furnace holds 10 lb. of metal. It operates on an average melt time of 9 min. for 6 lb. when casting alloy steel of the Stellite variety. Average elapsed time for one furnace heat is 12 minutes.

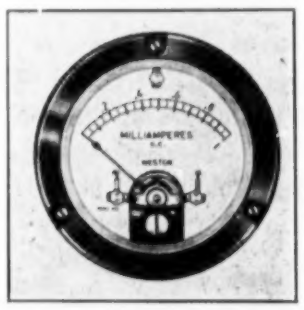
The melting chamber and the transformer are combined into a single unit in which the melting chamber is a two-piece refractory. It is seated in a granular insulation and is provided with tubular entrances for electrodes and pouring. The mold clamps on the shell face plate by compressed air. The transformer is a 17-kva. Class B dry type unit for operation on 220 or 440-volt single phase ac. power supply.

The operator pours a heat by inverting the furnace and allowing the molten metal to run into the clamped-on mold. As soon as the casting has solidified, he releases the air pressure, removes the mold and returns the furnace to melting position. A meter signals approximate progress of the heat. A second meter indicates rate of current input.

If you write maker identify as IEN - 107

METER . . Ruggedized design, 300 microamp. to 8 milliamp. on dc.

Source: WESTON ELECTRICAL INSTRUMENT CORP.
641 Frelinghuysen Ave., Newark 5, N. J.



In Circular A-38-A

Model 1521 Class 52 is new ruggedized design in the company's line of electrical panel instruments to meet U. S. Signal Corps Specification MIL-M-10304. Overall diameter is a little under 2¾ inches. Each assembly is provided with a sealed zero corrector in the lower part of its plastic window for screw driver adjustment. The mechanism is shock mounted on a metal deck molded into compounded rubber. Brass terminals are imbedded and bonded to the shock mount during the molding process.

Jewels are borosilicate glass, spring backed to protect against shock damage. A flat plastic window seals the front and protects the lance shaped tubular heat treated aluminum pointer. The complete assembly is housed in a steel case that shields against external magnetic fields and permits the instrument to be mounted interchangeably on magnetic and non-magnetic panels. Three stainless steel screws and nuts and three lockwashers are provided for the mounting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 108

YOUR COPY NOW READY!

NEW
SET SCREW CATALOG
ITS FREE!
Ready Now!

newest catalog of Setko Set Screws with all style heads and points in all metals. Includes data on ZIP-GRIP* Self-Locking Set Screws used for excessive vibration and the *new* Nu-Cup Set Screw which gives increased holding power with the same setting torque. Catalog gives latest dimensional data, list prices and technical data from plant with 17 years of specialized experience in supplying billions of set screws to nearly 1300 manufacturers. Simply Write Your Name and Address in Margin and Mail, Now!
*Pat. Pending

Send for FREE DEMONSTRATOR —that demonstrates ZIP-GRIP's* three-way Self-Locking effect. We'll also include illustrated Data Sheet and offer of Test Samples to fit your application. Send now.

Set Screw & Mfg. Co.
5 Main St. Bartlett, Ill. (Chicago suburb)

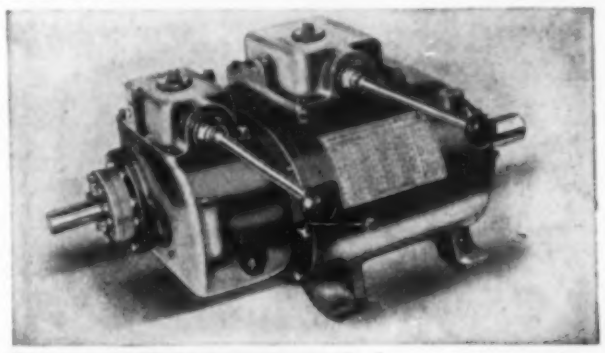
We specialize in Solving Puzzling Set Screw Problems.

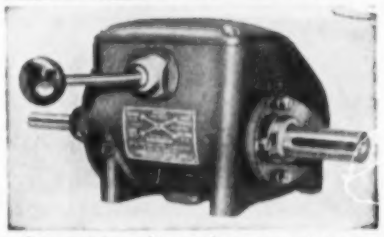
If you write maker identify as IEN - 109

WESTERN "SUPER" *with* 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills. CAPACITY 50 HP.

In geometric progression of 1.29 (total reduction of 6:1)





(left) "900 B series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever automotive type). Ratios — 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys, and motors from stock.

up to 100 h. p. For Metalcutting Lathes, Milling Machines, Shapers, Turret Lathes, Radial Drills, Slotters, Ball Cutters, Gear Cutters, Die Sinkers, Boring Mills, etc.

WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. — 4488 BEAUBIEN — DETROIT, MICHIGAN

If you write maker identify as IEN - 110

It's ready NOW! Yale's new Warehouser

SAFER SCIENTIFIC DESIGN protects operator...other workers. Never-fail "Dead Man" Controls...single hydraulic lifting cylinder...better visibility . . . every needed feature to make this the safest truck of its type!

SHORTER LENGTH AND LIGHTER WEIGHT allows right-angle tiering in aisles 6' wide or less. Perfect for use in older, unreinforced buildings...provides complete utilization of every cubic foot in new or proposed construction.

YALE
MATERIALS HANDLING EQUIPMENT
*Registered trade mark

—MAIL THIS COUPON TODAY—

The YALE & TOWNE Manufacturing Co., Dept. 361
Roosevelt Blvd. and Haldeman Ave., Phila. 15, Pa.
Please have your local representative call for an appointment.

Company_____
Name_____ Title_____
Street_____ City_____ State_____

In Canada write: The Yale & Towne Mfg. Co.
Box 337—Postal Station "A", Toronto

GAS AND ELECTRIC INDUSTRIAL TRUCKS • WORKSAVERS
HAND TRUCKS • HAND AND ELECTRIC HOISTS • PUL-LIFTS

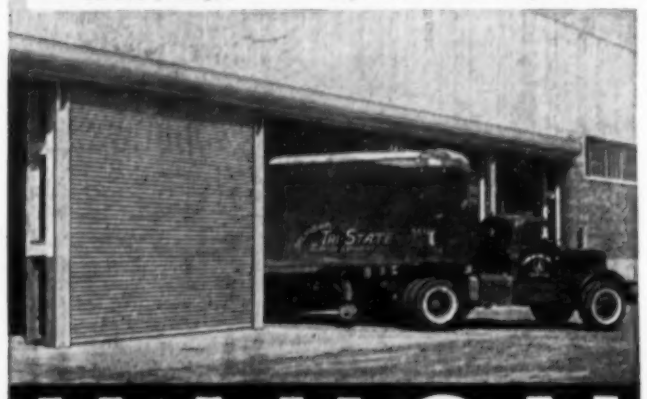
If you write maker identify as IEN - 112

Rolling Steel Doors

Manually, Mechanically, or Power Operated

Below you see Mahon Power Operated Rolling Steel Doors installed in six truck openings to a motor freight loading dock. Another Mahon Power Operated Rolling Steel Door 17'-0" x 22'-0" is installed in a railroad opening in connection with this same loading dock. Rolling Steel Doors occupy no usable space either inside or outside the opening . . . they create no overhead obstructions—cranes may be employed to handle materials adjacent to the door opening. Quick opening, quick closing, vertical roll-up action saves valuable time . . . all-metal construction provides permanence, greater protection against intrusion and fire, and assures you a lifetime of trouble-free service. Write for Catalog containing complete information including Specifications.

THE R. C. MAHON COMPANY
Detroit 34, Michigan • Representatives in All Principal Cities



MAHON

If you write maker identify as IEN - 113

MECHANIZE 4 Scrubbing Operations into 1

with a COMBINATION SCRUBBER-VAC!

Here's a single cleaning unit that completely mechanizes scrubbing. It applies the cleanser, scrubs, rinses if required, and picks up — *in one operation!* The *self-propelled Model 213P* at right, for heavy duty scrubbing of large-area floors, has a 26" brush spread, and *cleans up to 8,750 sq. ft. per hour. Finnell* makes *Scrubber-Vac Machines* in a full range of sizes (no need to *over-buy* or *under-buy*) . . . available on either lease or purchase plan. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 2601 East Street, Elkhart, Indiana.

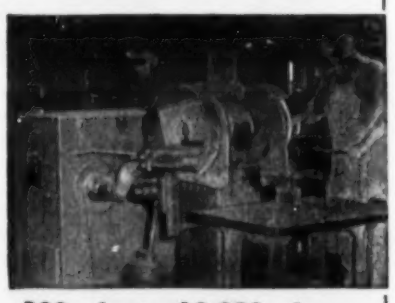
FINNELL SYSTEM, INC.
Originators of Power Scrubbing and Polishing Machines
FINNELL
BRANCHES IN ALL PRINCIPAL CITIES

If you write maker identify as IEN - 114

STOP DUST

INSTANTLY with DUSTKOP

DUSTKOP 1400 cfm.



DUSTKOP 3600 cfm.

300 cfm to 10,000 cfm per unit (22 models)

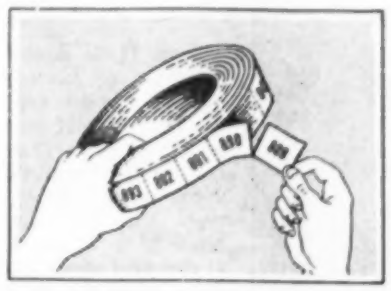
Standard pre-tested, available from stock. Ask for catalog 605-2. Describe dust problem for recommendation by return mail. No obligation.

AGET-DETROIT CO.
401 Main Street
ANN ARBOR, MICH.

If you write maker identify as IEN - 115

MARKING . . Self-adhesive tape numbered consecutively as specified

Source: YORK TAPE PRINTERS INC.
1954 Stanton St., York, Pa.



"Take a number"

The company announces availability of its self-adhesive tape with printed numbers and a standard legend to user's specification. A start can be made with any given number. Succeeding sections can continue to any higher number. The sections can be scored so units can be torn off by hand as shown in the illustration or the tape can be mounted in a dispenser without the scoring. Numbering can run in straight order or in any arrangement of repeats. Tape sizes also are to specification.

If you write maker identify as IEN - 116

REAMING . . Spiral toothed tool shears metal into which it is rotated

Source: SHEARCUT TOOL CO.
7043-47 Darby Ave., Reseda, Calif.

Details on request

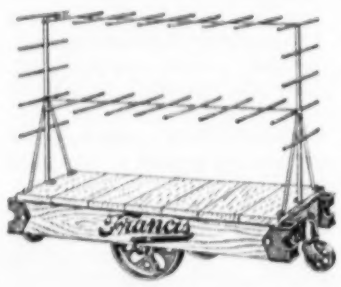
New sizes have been added to the company's Rotary Broach reamer line, previously described IEN-652-50. Stock sizes now range from 1/16 to 3 in. in 1/64-in. increments. Each reamer is made of high speed steel, ground from the solid after hardening.

The helical teeth remove metal in a shearing action to move the chips forward as the tool moves into or through a hole. The cutting teeth are 10 to 20 times longer than the teeth in a standard reamer. A tool can be resharpened from 10 to 30 times before the diameter is reduced to undersize.

If you write maker identify as IEN - 117

TRUCK . . Hand platform design with work handling racks as specified

Source: HOOSIER FENCE CO.
1703 E. 38th St., Indianapolis 18, Ind.



Ask for literature

The company announces availability of a new design and construction service with which it is prepared to equip its standard four wheel platform trucks with work racks to meet specified handling requirements. These racks are mounted either in permanent or removable assembly on the standard trucks.

The truck itself rates 1½ ton. It rides on a pair of center wheels and on end casters. Several sizes are in stock.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 118

A PAID NEWS ADVERTISEMENT BY MATHEWSON MACHINE WORKS

NEW ADJUSTABLE DRILL JIG eliminates layout; cuts drilling time

Used for drilling holes through round stock and hex stock from ¼" to 2" and cap screws from ¼" to 1¼", the new Mathewson Adjustable Drill Jig Eliminates layout and can cut drilling time on small lots to a fraction. And it eliminates the costs of special jigs for larger quantities. Holes for cotter pins, set screws, drive pins for bayonet joints, oil holes in tubular sections, and wiring holes in cap screws, are all typical of the operation that can be done more economically with this jig. Hole diameters range from .052" to .531", using your A.S.A. standard slip bushings. The hardened V-block has two 60-degree V's for centering round or hexagonal stock, one for ¼" to 21/32" diameter, one for 21/32" to 2" diameter. Adjustable stop for locating work longitudinally for drilling any distance from end, may be used on either side. Adjustable bushing carriers hold slip bushings and clamp work securely. Jig highly successful in permitting use of inexperienced drill operators. For circular write to: **Mathewson Machine Works,** 26 Hancock Street, Quincy, Mass.

If you write maker identify as IEN - 119

New, Larger COVER GOGGLES

fit over ALL modern glasses . . .

New CESCO series 548 and 549 Cover Goggles are 20% larger than former cover goggles. Contoured edges with wide surfaces eliminate pressure on nose, seal out flying particles or light flashes. Standard 50 mm lenses are quickly changed from front. Both chippers and welders models are well ventilated to reduce fogging. Simplified bridge adjustment. 3 headbands.

See or write your CESCO safety equipment distributor for full details

Features

- Lightweight sturdy plastic, contoured edges
- Ventilated lenses with baffled air flow
- Sideshields— Baffled for welding Perforated for chipping or grinding

CHICAGO EYE SHIELD COMPANY • 2326 Warren Blvd. • Chicago 12, Ill.

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Kansas City, Knoxville, Little Rock, Los Angeles, Mexico City, D. F., Milwaukee, Montreal, Philadelphia, Pittsburgh, Salt Lake City, San Francisco, Spokane, St. Louis, St. Paul, Toledo, Tulsa

If you write maker identify as IEN - 120

INCREASE PRODUCTION with Grafo LUBRICANTS

COLLOIDAL GRAPHITE for DEPENDABLE LUBRICATION

THERE IS NO BETTER LUBRICANT—NO SUBSTITUTE

A dispersion of Grafo colloidal graphite in petroleum, oil, water, castor oil, or other vehicle to meet your requirement is available Reduce friction, extend lubrication cycles

PERFORMANCE PROVED

On industrial applications such as Hot and Cold Forging, Drawing, Stamping, Steam Cylinders, Wire Drawing, Metal Extrusion, Impregnation, Parting Compounds, Die Casting — All Rubbing and Sliding Surfaces — High or Low Temperatures.

Write Us Regarding Your Special Applications

GRAFO COLLOIDS CORPORATION

MANUFACTURERS OF Grafo COLLOIDAL PRODUCTS

299 WILKES PLACE
SHARON, PENNSYLVANIA

If you write maker identify as IEN - 121

WHAT DO YOU Want to PUMP?

ASK FOR FOLDER 535F TODAY!

You Can Solve Your Problems With

VIKING ROTARY PUMPS
Cedar Falls, Iowa

THE ORIGINAL "GEAR-WITHIN-A-GEAR" ROTARY PUMP

If you write maker identify as IEN - 122

PRESENTING American's Sensational '53

KING SIZE SELECTION OF DRILL BUSHINGS

VIRTUALLY ELIMINATES SPECIALS!

American's NEW CATALOG

Gives You This KING SIZE Selection!

Our new selection of standard types and sizes are available to you through our fully stocked Distributors.

Our New Catalog was produced for your convenience • It contains a KING SIZE selection of standard types and sizes • 50% of your specials are now American's standards • All lengths are now standard (no added charges) • Simplifies selecting and ordering • Handy reference charts, pricing and technical data • Clearly organized • Plastic coated.

Get Your FREE COPIES Today!

AMERICAN DRILL BUSHING CO.
5107 PACIFIC BLVD. LOS ANGELES 58, CALIFORNIA
PHONE LOgan 5-7147

If you write maker identify as IEN - 123

Better rubber products are made with Du Pont NEOPRENE

Neoprene welding hose withstands rough use . . . assures smooth fuel flow

The hose lines which carry oxygen and acetylene to a cutting or welding torch get plenty of rough treatment during their lifetime. But hose made with *neoprene* tube and cover can take this daily punishment and still deliver a steady, dependable supply of fuel to the torch.

Maintenance men know that welding hose made with neoprene is top-quality hose . . . means fewer hose replacements. The durable neoprene cover resists cutting and abrasion from rough surfaces . . . withstands deterioration from ever-present grease and oil and from weathering. Inside the hose, the smooth neoprene tube gives the same kind of dependable service . . . won't crack and crumble into loose particles that clog the torch.

Welding hose is only one of the many high-quality products that benefit from Du Pont neoprene's superior qualities. While Du Pont makes no finished products of neoprene, your manufacturer or distributor will gladly tell you about the neoprene products he supplies.

SEND FOR "THE NEOPRENE NOTEBOOK"

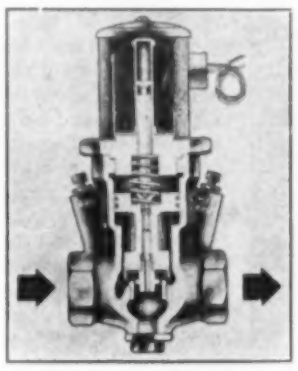
Each issue describes new, unusual applications of neoprene that will be of interest to you. E. I. du Pont de Nemours & Co. (Inc.), Rubber Chemicals Division DI, Wilmington 98, Delaware.

NEOPRENE
The rubber made by Du Pont since 1932
DU PONT
BETTER THINGS FOR BETTER LIVING . . . *through Chemistry*

If you write maker identify as IEN - 125

VALVE . . Solenoid operated for 150 lb. steam, 400 lb. air, oil

Source: J. D. COULD CO.
734 E. Washington St., Indianapolis 2, Ind



Ask for Bulletin 500

Type C designates new design in the company's line of solenoid valves. Line pressure is employed to open and close the main port when the solenoid mounted on the valve body opens and closes a pilot port. The valve is available in ¾ and 1-in. sizes. The solenoid is subject to specification for standard ac. or dc. operation at temperatures to 250 deg. F. or to 450 deg. F. Normally closed, normally open and continuous duty types available.

Inlet pressure, with the valve in closed position, surrounds the port, moves upward around the lower portion of the piston to exert upward pressure on the bottom of the main piston head. Pressure also moves upward through a pilot port on the inlet side where the flow area is controlled by a needle valve to the space above the piston. This pressure exceeds the upward pressure and holds the valve closed as long as the pilot opening through center of the piston is closed by the solenoid plunger.

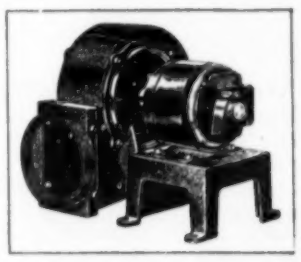
Energizing the solenoid raises the plunger, providing a hammer action in its initial movement, to "break" the pilot stem away from the port and permit pressure above the piston to escape to the outlet side of the valve. This is accompanied immediately by valve opening due to the upward pressure beneath the piston.

The solenoid, in the normally closed design shown in the illustration, stops escape of pressure through the piston so build up occurs above it and the valve is closed by the line pressure. In the event that electric power fails, a needle valve, communicating between the space above the piston and the outlet side of the valve, can be opened manually to release the closing pressure and the valve will be opened again by line pressure. It will remain open until this second needle valve is closed. Then the piston will return to closed position.

If you write maker identify as IEN - 126

BLOWER . . Motor driven centrifugal three sizes, 500 to 1,500 cfm. free

Source SUTTON MFG. CO.
112-16 W. Wilson Ave., Norfolk 10, Va.



Section or pressure

Models HB-60, 75 and 80 are three new motor driven blowers in the company's line, previously described IEN-2893-50. The three are driven by ⅙, ¼ and ⅓-hp. motors. Round duct sizes are 6, 7 and 9 in. in diameter overall.

The blower housing is made of steel in welded assembly and is supported on cast iron brackets. The outlet can be turned right, left, up or down. A removable outlet nozzle adaptor permits connection to a rectangular duct. Impeller finish is baked aluminum. The housing is crackle finished.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 127

If you write maker identify as IEN - 128

3 LINES OF SAFETY SWITCHES for 3 COMPLETELY DIFFERENT MARKETS

Write for Bulletin 3100. Address Square D Company, 6060 Rivard St., Detroit 11, Michigan.

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 129

STOP ACCIDENTS with BRADY SAFETY SIGNS

Here's an AMAZING BRAND NEW SAFETY SIGN that will be welcomed by Safety Men! Brady Safety Signs stick to wood, glass, metal, concrete, etc. without moistening. May be applied to any clean surface in a jiffy. No screws, nails, bolts or skilled help necessary. All you do is peel from card, apply where wanted and the sign is up to stay.

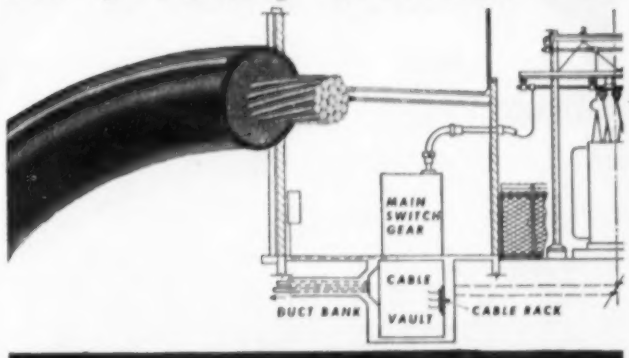
Brady Safety Signs are made of durable cotton cloth, Silicone Coated to resist dirt, grime and moisture. CONFORM TO ASA Standard Z35.1-41. Select your requirements from a complete catalog of standard safety messages. Cost only a few cents per sign. Immediate delivery. Specials made to order.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

MANUFACTURERS OF SELF-STICKING PRODUCTS
WORK MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS
W.H. BRADY COMPANY
743 W. GLENDALE AVE., MILWAUKEE 12, WIS.

If you write maker identify as IEN - 130

for primary distribution



...OKOLITE-OKOPRENE

Keep your electrical circuits *strong,* free from weak spots which may disrupt production. For primary distribution cables, and *throughout* your plant circuits, specify Okolite-Okoprene wires and cables. Here's why:

Okolite Insulation stands up under heavy power loads, continuous use year after year.

Okoprene Sheath protects against abrasion, moisture, heat, oils and acids.

Insulation and sheath are applied by Okonite's strip process and vulcanized in a metal mold, giving greater stability and longer life to both. Write today for Bulletin IE-1053 to The Okonite Company, Passaic, N. J.

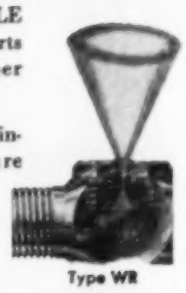
The best cable is your best policy

OKONITE *insulated wires and cables*

If you write maker identify as IEN - 131

DELAVAN SPRAY NOZZLES FOR UNUSUAL APPLICATIONS

Type WD



Type WR

There is a DELAVAN NOZZLE for any flow rate from 2 quarts per hour to 63 gallons per minute.

TYPE WD — ideal for obtaining finest possible pressure atomization.

TYPE WS — available for either full or hollow cone spray. Excellent for a wide variety of special applications.

TYPE WR — a right angle nozzle producing hollow cone spray sicilar to Type WS.

TYPE AG—delivers flat uniform spray without concentration at edges. Drifting reduced to minimum.

Type WS

Type AG

Write for Catalog No. 31

DELAVAN MANUFACTURING CO.
3009 SIXTH AVENUE
DES MOINES 13, IOWA

If you write maker identify as IEN - 132

NOW . . . A POLISHER THAT'S UNIVERSALLY ADJUSTABLE

Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns — such as mouldings and formed or extruded shapes.

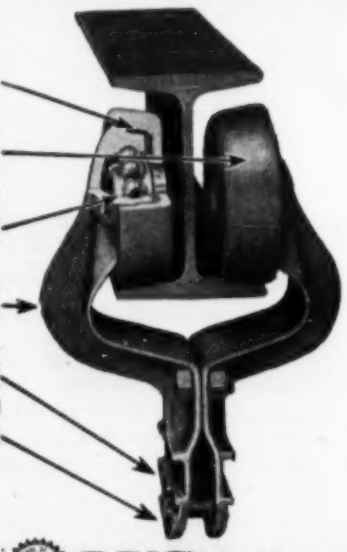
The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

Don't hold back. Tell us about your finishing problems; we MAY have the answer to cutting YOUR costs.

Grinding and Polishing Machinery Corp.
SUCCESSORS TO VONNEGUT MOULDER CORPORATION
2530-D WINTHROP AVE., INDIANAPOLIS 5, U.S.A.

If you write maker identify as IEN - 133

Important points to look for when you buy trolleys You get them all when you buy Link-Belt



Effective sealing of wheel and bracket keeps out dust and dirt.

Wheels are drop-forged, internally machined to extremely close tolerances.

Raceways are induction hardened. High load capacity is based on entire assembly — not just on bearing.

Rugged, one-piece bracket and clevis are drop-forged and heat-treated—fewer parts to maintain.

Trolley can replace other makes without disturbing chain's operating position.

Clevis pins are locked in bracket, cannot rotate. Bracket wear is minimized.

Write for Folder 2241-B.

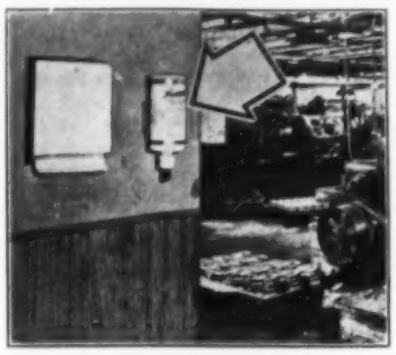
LINK-BELT
LINK-BELT COMPANY
Dept. 21, 307 N. Michigan Ave.
CHICAGO 1, ILL.

12,822

If you write maker identify as IEN - 134

CLEANING . . Waterless hand soap in dispensers for shop departments

Source: HAMMONS PRODUCTS INC.
2102 Lincoln Tower, Fort Wayne 2, Ind.



Workers like it

The company has developed a new quart and a new gallon dispenser to mount on a wall as a cleaning station in connection with a wall cabinet holding paper towels. The dispenser and the cabinet can be installed near operating machines, at one or more locations in a plant department, so the operators can clean their hands without going to a central washroom. Test installations indicate the possibility of saving a good deal of worker time.

If you write maker identify as IEN - 135

HOSE . . Ebonite tube wire and glass reinforced for steam

Source: QUAKER RUBBER CORP.
Comly & Tacony Sts., Philadelphia 24, Pa.

Suited for rough service

Ironsides trade names a new hose to handle steam in utility and cleaning operations. It employs an Ebonite heat resistant compound tube reinforced with wire braid and over it a glass core braid. The latter provides both strength and heat insulation. An outside cover also employs Ebonite.

Working pressure is to 200 pounds. Sizes range from ½ to 1¼-in. bore. Applications are in steel mills, refineries, glass factories, foundries, other exacting locations.

If you write maker identify as IEN - 136

SHEARING . . Motor driven machine cuts 6 by 6 in. notch in 16 gage steel

Source: O'NEIL-IRWIN MFG. CO.
547 Eighth Ave., Lake City, Minn.

Foot operated clutch

The company announces application of power to its Di-Acro notcher, previously described IEN-779-48. Application can be made also in straight shearing work within the machine's capacity. Speed is to 180 strokes per minute.

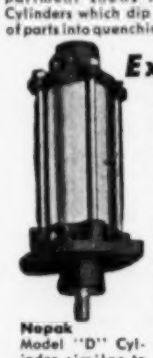
Work is manipulated on a 12 by 18-in. table equipped with gages to adjust depth and notch angle. Floor space measures 17 by 28 inches. Weight is 465 pounds. List price $640.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 137

View of Heat Treating Department shows NOPAK Cylinders which dip baskets of parts into quenching tanks.

Quench Dipping with NOPAK Cylinders



Nopak Model "D" Cylinder similar to those shown in illustration.

Expedites Heat Treating Cycle . . .

At Gas Machinery Company, Cleveland, workpieces are conveyed from heat treating furnaces into wire baskets which are then immersed into a quenching bath by NOPAK Cylinders mounted above the tank. After quenching, the baskets are lifted out of the tank by the cylinders. The parts are transferred to another conveyor, with the aid of another NOPAK Cylinder.

This is typical of many materials-handling operations in which NOPAK Valves and Cylinders are used. For others see NOPAK Application Manual.

GALLAND-HENNING MANUFACTURING CO.
2760 SOUTH 31ST STREET • MILWAUKEE 46, WISCONSIN

Refer to Sweet's File for Product Designers or write for Bulletin SW-1.

Representatives in Principal Cities

NOPAK VALVES AND CYLINDERS
DESIGNED for AIR and HYDRAULIC SERVICE

If you write maker identify as IEN - 138

NO SPRINGS TO BREAK in the Nutting JACK IT'S ALWAYS DEPENDABLE

The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service.

One lift truck and two dead skids cost about the same as *two Nutting Jacks and twelve semi-live skids.* That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. Material stored on semi-live skids is made mobile in a hurry. The jack may be coupled to one skid, then uncoupled and coupled to another faster than the time it takes to tell about it.

Send for Bulletin 48-JS

Look in your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. It will pay you to get all the facts on this superior Nutting Jack-Skid handling system.

Nutting makes everything in floor trucks, wheels, casters.

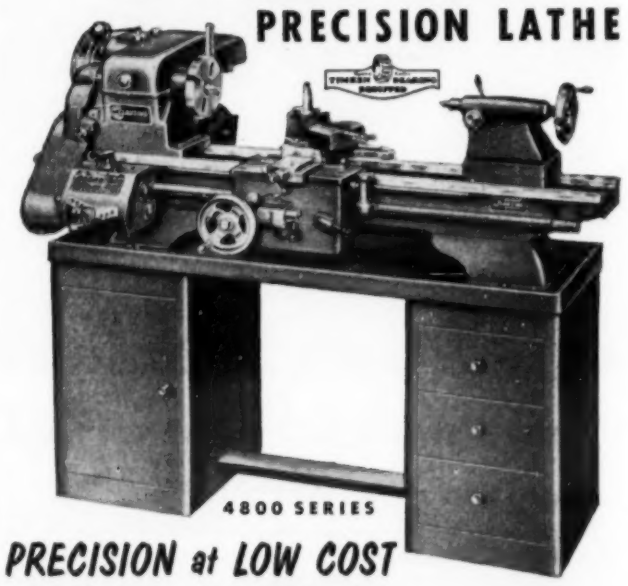
NUTTING TRUCK AND CASTER COMPANY
2014 Division Street Faribault, Minnesota

If you write maker identify as IEN - 139

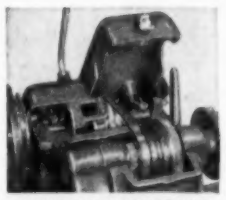
COUNTERSHAFT CLUTCH and BRAKE SAVE TIME and INCREASE PRODUCTION

CLAUSING

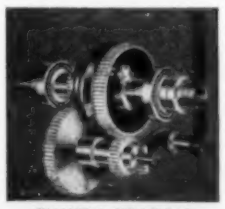
12" HEAVY-DUTY PRECISION LATHE



PRECISION at LOW COST FOR TOOL ROOM OR SHOP!



CLUTCH AND BRAKE EQUIPPED SPINDLE COUNTERSHAFT



TIMKEN BEARING EQUIPPED SPINDLE

HEAVY-DUTY PRECISION V-BED

This Clausing lathe has a built-in countershaft with friction clutch and brake that permit instant starts and stops of the headstock spindle without stopping the motor. You step up production, save many costly minutes every day with a Clausing heavy-duty precision lathe.

And this is but *one* of the many extra-value features you get with a Clausing. Others include Timken tapered roller bearings equipped spindle; wide heavy bed with Vee-ways and flat ways precision ground; automatic apron with splash lubrication; complete V-belt drive; massive construction — 36" between center lathe weighs 535 pounds.

Prices start at $420.00! The Clausing 4800 is truly the greatest 12-inch lathe value. For complete details, see your dealer or write for catalog for additional information.

Atlas CLAUSING

CLAUSING DIVISION
ATLAS PRESS COMPANY,
1-105 N. PITCHER ST. • KALAMAZOO, MICH.

If you write maker identify as **IEN - 190**

HERE IS A COMPACT DURABLE CHEMICAL TRANSFER PUMP FOR HANDLING PROCESS LIQUIDS

HIGH QUALITY
EASILY SERVICED

PEERLESS TYPE CTB PUMP

PEERLESS PUMPS

Liquid End Made of Type #20 Stainless Steel Alloy

Handles corrosive and abrasive liquids at moderate temperatures and pressures. Write today for Peerless pump Bulletin No. B-1606. Profusely illustrated with pump views, sectional drawings, elevations and dimensions. Contains complete head-capacity data and details of Peerless construction.

TYPE CTB CHARACTERISTICS

HEADS: 10-140 ft.
CAPACITIES: 10-250 gpm
HP RANGE: 1-10 hp
LIQUID TEMPERATURE: up to 250° F

PEERLESS PUMP DIVISION
FOOD MACHINERY AND CHEMICAL CORPORATION

Los Angeles 31, California and Indianapolis 8, Indiana
Offices: New York, Chicago, St. Louis, Atlanta; Dallas, Plainview and Lubbock, Texas; Fresno, Los Angeles; Phoenix; Albuquerque, N. M.; Tulsa

If you write maker identify as **IEN - 191**

This Electrical Reporter Stays on the Tough Jobs Longer...

Added Evidence that—

Everyone Can Count on VEEDER-ROOT

Compact and rugged . . . this electrically operated reset counter is specially designed for tough jobs that demand longer counter life.

Here's another instance of the *infinite applicability* of Veeder-Root *Count*rol — electrical, mechanical or manual. And here's another instance, too, of the endless resourcefulness of Veeder-Root engineering, and the ability to design a *complete counting package* that fits the job fully and exactly. Now . . . what's *your* problem?

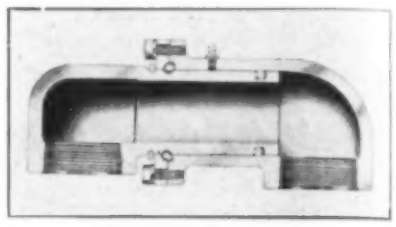
VEEDER-ROOT INCORPORATED
"The Name That Counts"
HARTFORD 2, CONNECTICUT

Chicago 6, Ill. • New York 19, N.Y. • Greenville, S.C.
Montreal 2, Canada • Dundee, Scotland
Offices and Agents in Principal Cities

If you write maker identify as **IEN - 193**

PIPE FITTING . . Swivel joint for liquid loading and unloading

Source: BARCO MFG. CO.
1804 W. Winnemac Ave., Dept. J-18, Chicago 40, Ill.



Ask for Catalog 400

Eleven styles to meet any requirement in construction of a loading or unloading rack are included in the company's new line of ball bearing swing joints. Four sizes range from 2 to 4 inches. Pressure capacity is to 1,500 lb., depending on size and service. Temperature range is between minus 30 and plus 250 deg. F. The O-ring that seals the joint is supplied in correct material to handle gasoline, fuel oil or other liquid as specified.

The design is characterized by the long lubricated bearing and by the assembly of the ball bearing so the balls cannot fall out when the joint is taken apart. Both major halves are made of steel. Lubrication is by a pressure fitting.

If you write maker identify as **IEN - 194**

PACKAGING . . Plastic cushioning molded to protect delicate equipment

Source: CALRESIN CORP.
331-35 N. Santa Anita, Arcadia, Calif.

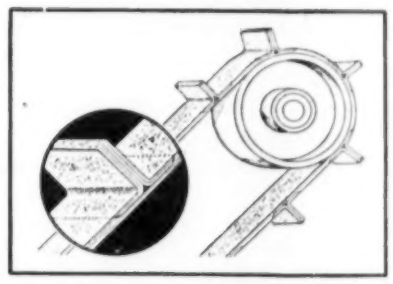
Technical data upon request

Type CPC is a new patented compounded polyvinyl chloride for forming or molding to fit articles that are to be protectively packaged. The material can be molded with a covering, such as cloth, on either side. It can be bonded to any specified surface. It is fungus proof and will not support combustion. Compression, under given conditions, is somewhat less than that for airfoam cushioning and somewhat more than for certain types of rubber. Relatively heavy objects can be cushioned without causing excessive cold flow.

If you write maker identify as **IEN - 195**

CONVEYING . . Rubber fabric belt with flight cleats vulcanized in place

Source: A. J. SPARKS & CO.
860-66 Grandville Ave., S. W., Grand Rapids 2, Mich.



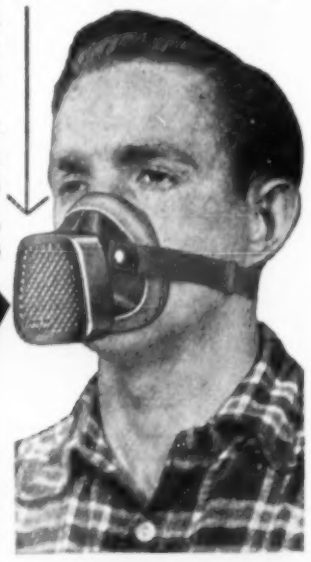
Integral design

The company announces availability of any of its forty types of Champion conveyor belt with flight type cleats, in any width and spacing and to 6 in. in height, vulcanized in place on the belt. The cleats cannot pull out and will flex around head and tail pulleys. The cleated belt can be employed in place of chains and bucket in material conveying elevators.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 56

If you write maker identify as **IEN - 196**

Here's breathing protection against nuisance exposure to ORGANIC VAPORS and ACID GASES



IT'S THE NEW!

McDonald
GASFOE RESPIRATOR

★ Light . . . only 4 ounces complete!! So perfectly engineered for balance that only slight tension on headband provides an absolute seal with complete comfort. ★ No interference with vision or working freedom. ★ Every part replaceable.

Write for bulletin and prices

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
5721 WEST 96TH ST., LOS ANGELES 45, CALIF.
Other Offices in San Francisco & Houston

If you write maker identify as **IEN - 197**

INDUSTRIAL INKS To Mark Anything!

Whatever the substance, Phillips has an ink to mark it permanently and legibly—or can make one. Marking experts insist on "Clear Print" Wood Block Stamp Pads and Opaque Inks. They get clear, sharp, fast-drying impressions. Also inks for brush, pen, stencil or machine application available in a variety of colors and quantity containers.

★ Quick Laboratory Service On Your Problem Markings

★ To Permanently Mark . . . Metals, Plastics, Glass, Wood, Paper, Leather, Ceramics—glazed, varnished or lacquered surfaces and virtually every other known material.

L. A. PHILLIPS, President
PHILLIPS PROCESS CO. INC.
192 MILL STREET
ROCHESTER 14, N. Y.

If you write maker identify as **IEN - 198**

New Press Catalog

Complete details and illustrations of Federal's high quality line of open-back, inclinable presses, 6 to 80 tons including **Standard Presses, Dial Feed Presses, High Speed Presses, Special Presses.** Shows unusual applications and how to select presses of proper capacity. You will welcome this catalog. It should be in your files.

Write For Free Copy Today!

THE FEDERAL PRESS COMPANY
503 Division Street, Elkhart, Indiana

FEDERAL PRESSES
28 YEARS OF QUALITY CONSTRUCTION

If you write maker identify as **IEN - 199**

NoDrip ...STOPS CONDENSATION DRIP!

NoDRIP PREVENTS RUST
in addition to stopping drip and keeping floors dry.

ANYONE CAN APPLY
Brush, trowel or spray NoDrip on tanks, condensers, suction lines, vats, pipes, walls ceilings, etc. NoDrip adheres to metal, concrete, brick, plaster. It forms a seamless covering that is effective as soon as dry. Acid, alkali and brine resistant.

Interesting 32-page Handbook shows what NoDrip is and what it does. It's free. Send coupon today.

☐ SEND NoDRIP HANDBOOK
NAME .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....

J. W. MORTELL CO., 510 BURCH ST., KANKAKEE, ILLINOIS
TECHNICAL COATINGS SINCE 1895

If you write maker identify as IEN-200

WRITE OFF COSTLY ERRORS

USE BRADY "WRITE-ON-LABELS"

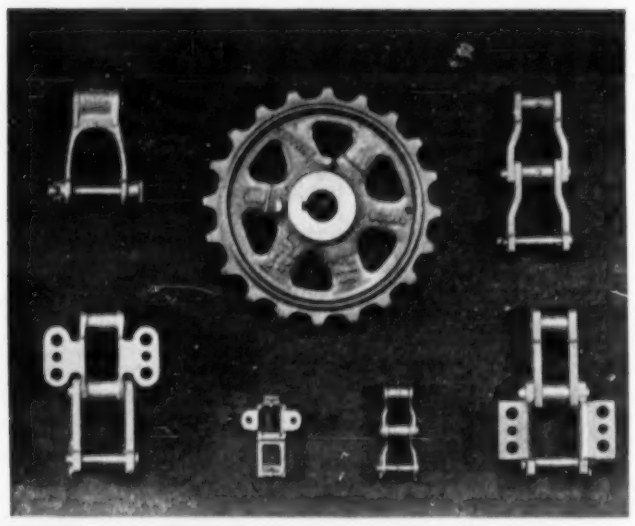
A remarkable new development in write-on labels, combining printed forms and write-on space. Eliminate errors, simplify quality control, speed production through the use of these Brady self-sticking, Write-on Labels, made to your requirements. They're mounted on handy dispenser cards which serve as writing boards; easily written on with pencil, pen, rubber stamp or even typewriter, and then applied to any surface. Hundreds of money-saving uses, including inspection, identifying circuits and instruments otherwise hard-to-mark.

Made of self-adhesive, sturdy cloth backing, pre-cut to exact size, shape, color and printing desired. Send for samples and complete information on stock and special labels.

MANUFACTURERS OF SELF-STICKING PRODUCTS
WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED BELL TAPE · MARKS & STENCILS
W.H. BRADY COMPANY
759 W. GLENDALE AVE., MILWAUKEE 12, WIS.

If you write maker identify as IEN-201

CHAINS and SPROCKETS



JEFFREY
ESTABLISHED 1877
THE JEFFREY MANUFACTURING CO.
914 Fourth Street, Columbus 16, Ohio

If you write maker identify as IEN-202

SUPERSENSITIVE BALANCER!

New CROWN BALANCING WAYS

NO CENTERING NEEDED!

Gives Quick Static Balance of ARMATURES, FLY WHEELS, CRANKSHAFTS, FANS, etc.

• Eliminates trial and error method of detecting "heavy spots" in rotating parts. Free turning discs, mounted on ball bearings insure least friction and highest possible sensitivity. Load Capacities of 400 to 5000 lbs., swing 10" to 60". Easily portable.

WRITE FOR DETAILS

CROWN INDUSTRIAL PRODUCTS
402 Borden Ave.
Sycamore, Ill.
Please send catalog data and prices on CROWN Balancing Ways.
Name____
Company____
Address____
City____ Zone____ State____

USEFUL INFORMATION

NEWS NOTES

If you write maker identify as IEN-203

CALENDAR . . Color pictures of company's equipment on pages of its 1953 calendar

Caterpillar Tractor Co.
602 W. Washington, Peoria 8, Ill.

Round the world application pictures are shown in the 1953 Caterpillar calendar for the company's diesel engines, tractors, graders, earth-moving equipment. A caption under each tells about the job and about the picture itself. The calendar is available while the supply lasts.

If you write maker identify as IEN-204

CALENDAR . . And decimal equivalents are combined in new 22 by 34 inch wall chart for 1953

Hyatt Bearing Division
425-29 Middlesex St., Harrison, N. J.

Smart combination of calendar and equivalent chart is offered by the company while the supply lasts. Equivalents are 1/64-in. steps. "Preferred for Precision" is the title.

If you write maker identify as IEN-205

CALENDAR . . Cartoon illustrations provide humorous touch in the company's 1953 calendar

Minneapolis-Honeywell Regulator Co.
4456 Wayne Ave., Philadelphia 44, Pa.

Bill Eddy's cartoons appear again above each page in the company's 1953 calendar. Each color drawing depicts some sort of trouble that can happen in a manufacturing plant, in construction, instrumentation, piping. Size is 12 by 18 inches open. The company will send you a copy while the supply lasts.

If you write maker identify as IEN-206

CONSTRUCTION . . Prestressed concrete is subject of a series of lectures to be given in April

Newark College of Engineering
365-69 High St., Newark 2, N. J.

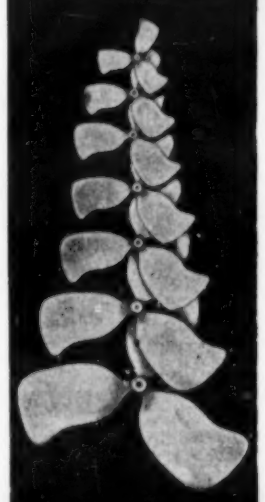
Portland Cement Association is co-sponsor with the college for a series of eight lectures to be given Monday and Thursday evenings from April 6 to April 30. Subject is pre-stressed concrete. Write to the Special Courses Division.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

If you write maker identify as IEN-207

Kloppenborg (one piece) Cast Aluminum

EXHAUST and CIRCULATING FAN BLADES



INDUSTRIAL USE

Where air is to be moved — Kloppenborg one-piece high grade cast aluminum alloy fan blades are proving exceptionally efficient. Kloppenborg Fan Blades are purchased by many of America's leading industrial plants.

EIGHT SIZES

Kloppenborg Fan Blades are made in 8 sizes—from 12" to 36"—and are rated at 1750 RPM to deliver approximately from 1255 to 14,900 CFM. They are bored to most shaft specifications and are carefully balanced. YOUR maintenance men can install them easily.

Send today for a catalog on blades and all other parts needed for fans.

KLOPPENBORG ALUMINUM FOUNDRY
Established 1938
DAVENPORT 5, IOWA

If you write maker identify as IEN-208

THIS IS IT!

World-wide recognition for this outstanding line of electric soldering irons—

HEXACON

—specified by the big names for the *TOUGH JOBS!*

WESTERN ELECTRIC
MINNEAPOLIS HONEYWELL
RADIO CORP. OF AMERICA
WESTINGHOUSE
STROMBERG CARLSON
EMERSON
KAISER
SPERRY
BENDIX
etc.

PLUG OR SCREW TIPS
40 to 700 Watts
5/8" to 1 3/4" Tip Dia.

Follow the leaders and you'll specify HEXACON! They'll efficiently solve your soldering problems too! Write for literature.

Here's the famous HATCHET TYPE

These irons feature better balance for reduced operator fatigue. Efficiency is stepped up, and quality of work is improved. The ideal iron for inaccessible and intricate jobs.

HEXACON ELECTRIC CO.
155 W. CLAY AVE., ROSELLE PARK, NEW JERSEY

If you write maker identify as IEN-209

drills **6** inches of concrete per minute

...gives lowest cost per foot of concrete drilled with a

tilden

ROTARY KONKRETE KORE DRILL

Patented core slot expels cuttings automatically

U. S. Pat. No. 2506474

Two-thirds more cutting surface make Tilden 70% more efficient. Drills 5 to 7 times more holes without resharpening—even reinforced concrete. Free factory resharpening! Use with any electric or air drill. 29 standard sizes 3/16" to 4". Interchangeable shanks up to 60".

WRITE TODAY for free, illustrated catalog.

SOLD BY SUPPLY HOUSES EVERYWHERE

TILDEN TOOL Manufacturing Company
209 Los Molinos • San Clemente, Calif.
Branch Office: 1144 W. Washington Blvd., Chicago 7, Illinois

MORE SPEED — MORE SUPPORT

PADDOCK GUIDES

Make Old or New Band-Saws Safer—Faster—And Saves on Expensive Blade Breakage

Pictured here is PADDOCK BALL-BEARING BAND-SAW GUIDE—MODEL 20. Easy to install—simple to adjust! When a 36" machine is equipped with Model 20 guides, and the guides are adjusted to hold the blade at a 45° angle (see angular adjustment at right, lower picture), material 22" wide can be cut to any length.

Inter-changeable, ball bearing wheels running with blade give friction-free support. Holds blade as if in a frame. Improves old and new band-saw operation. Used in thousands of America's leading industries. Write for prices and complete information. Give size of machine and material being cut.

Write Directly to
PADDOCK TOOL CO.
Guide Makers Since 1920
1418 Walnut St. Kansas City 6, Mo.

Paddock BALL-BEARING BAND SAW GUIDES

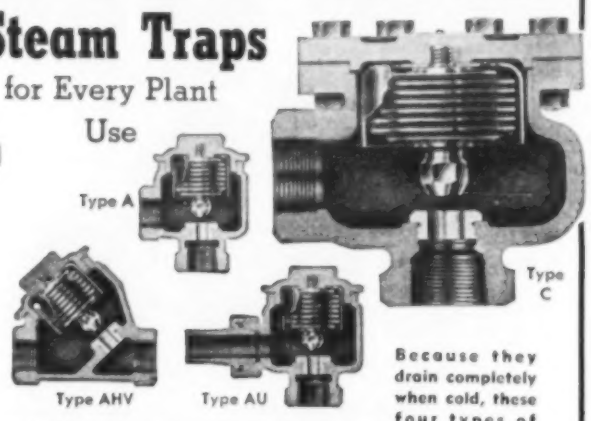
If you write maker identify as IEN-211

NICHOLSON MAKES

FREEZE-PROOF

Steam Traps

for Every Plant Use

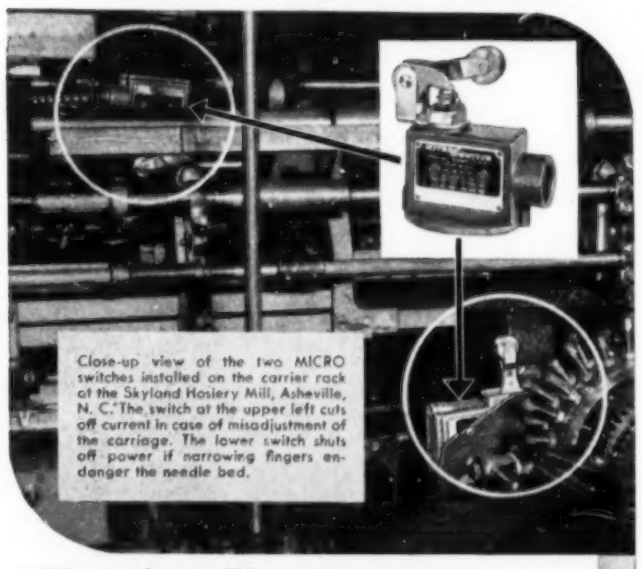


Because they drain completely when cold, these four types of Nicholson steam traps are positively freeze-proof. Can be freely installed outdoors. Universally recommended for use in lines which need not be in continuous use during cold weather, because they are freeze-proof and because their 2 to 6 times average drainage capacity results in minimum heat-up time. The non-air binding feature of Nicholson traps also notably facilitates heat transfer in severe weather. Size ¼" to 2"; pressure to 250 lbs.

BULLETIN 152
159 Oregon St., Wilkes-Barre, Pa.

W. H. NICHOLSON & CO.
TRAPS · VALVES · FLOATS

If you write maker identify as IEN-212


Close-up view of the two MICRO switches installed on the carrier rack at the Skyland Hosiery Mill, Asheville, N. C. The switch at the upper left cuts off current in case of misadjustment of the carriage. The lower switch shuts off power if narrowing fingers endanger the needle bed.

"Since installing these two MICRO switches we have had no record of needle breakage"

Says L. H. Prinz, Plant Engineer, Skyland Hosiery Mill, Asheville, N. C.

Not only have these MICRO switches prevented needle breakage but, according to Mr. Prinz, they have also reduced the danger of jams on the carrier rack that can cost from $500 to $2000 to repair.

Skyland's engineer installed one switch on the carrier rack in such a way that it stops the machinery at once in the event of any misadjustment or mechanical failure on the part of the carriage. The other switch acts to stop the machinery if the narrowing fingers approach each other so closely as to tear up the needle bed.

Plant engineers in every industry are daily finding more and more uses for MICRO switches as limits, safeties and interlocks to make existing equipment more automatic and more productive.

There is a MICRO authorized distributor located near you with a wide variety of MICRO precision switches. MICRO engineering service is also available at nearby branch offices to help you solve your switch problems.

MICRO

MAKERS OF PRECISION SWITCHES

FREEPORT, ILLINOIS

A DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR COMPANY

View of portion of the Skyland Mill showing plant equipment that has been made safer and more automatic by the use of MICRO precision switches.

USEFUL INFORMATION

(Continued)

If you write maker identify as IEN-214

CONVEYING . . File folder of information on monorail applications to suggest possible uses for you

American Monorail Co.
13111 Athens Ave., Cleveland 7, Ohio

New service offered to potential users of monorail equipment is based on a letter-size file folder available on request. In it the company has assembled a collection of data sheets, each on an individual application of its monorail. These range from handling bananas to moving hot-metal ladles about in a foundry. New sheets will be sent you from time to time to keep up to date. Ask for "Engineered Application" data file.

If you write maker identify as IEN-215

CONVEYING . . Four field reports on the use of conveyors in building-supply yards

Rapids-Standard Co.
342 Rapistan Bldg., Grand Rapids 2, Mich.

New collection of four case-history reports has been made by the company in a file folder, "Solved . . Handling Problems in Building Supply Yards". It will be sent you on request. Each report is a 4-page folder on a specific application of gravity and power conveyors with a summary on results.

If you write maker identify as IEN-216

CUTTING . . Selection of tool steel to back up carbide-tipped tools described in booklet

Allegheny Ludlum Steel Corp.
2020-A Oliver Bldg., Pittsburgh 22, Pa.

How to select the right type of tool steel to support a carbide tip is the subject of new 20-page Booklet TS-21, available upon request. Desirable qualities are named at the start. Specific steels are recommended for blanking and lamination dies, drawing dies, single-point tools, multiple-edge tools, form tools, punches. Methods of fastening carbide are described.

If you write maker identify as IEN-217

CUTTING . . Booklet on flame cutting describes the cutting torch and how it operates

National Welding Equipment Co.
216-20 Fremont St., San Francisco 5, Calif.

Useful information in ABC form is presented in new 40-page Booklet CW on flame cutting. It covers such points as how a cutting torch works, why preheating flames, importance of the oxygen jet, which fuel gas to select, high spots in torch design, selection of company's cutting torches and torch tips.

If you write maker identify as IEN-218

ELECTRONIC TUBES . . Introductory booklet on gas-filled electronic tubes and their applications

Electrons Inc.
125-29 Sussex Ave., Newark 4, N. J.

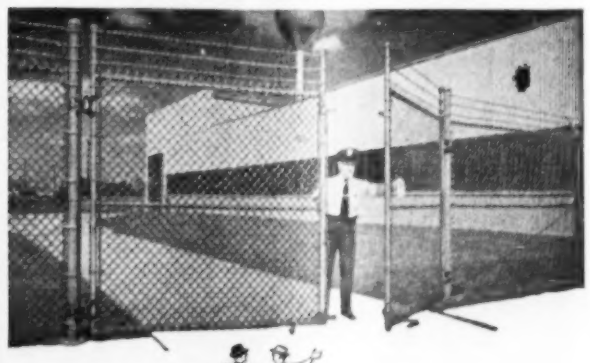
"Gas Tubes in Industry" titles new 8-page booklet intended as an introduction or summary on the properties and uses of gas-filled tubes. It starts with the reason for their use, describes rectifier diode and thyratron types along with standard applications and a bibliography.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-219

PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •



Defense against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

Write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

If you write maker identify as IEN-220

REDUCE HANDLING

of Tools, Parts and Materials

Because Stackbins are portable containers — not fixtures — tools, parts and materials can be carried to departments, from machine to machine, or held in stockrooms without being transferred from one container to another. Stored in Stackracks, any Stackbin is instantly accessible when its contents are needed — without disturbing any other bin. *Stackbins*—individual hopper-fronted stacking bins, slide like drawers in *Stackracks* — individual units which lock together to form racks of any size, shape or capacity.

STACKBINS IN STACKRACKS

Manufactured and sold in Canada exclusively by Wickware-Stackbin, Ltd., Ottawa

Write Stackbin Corp., 1077 Main St., Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

If you write maker identify as IEN-221

Over Half of America's Top Companies Use "Speed Sweep"

THE BRUSH WITH THE STEEL BACK

BECAUSE it sweeps faster and cleaner, and outlasts ordinary brushes 3 to 1, Speed Sweep has become the No. 1 sweeping tool of American Industry — used by over 50,000 firms. Whether you use a few or a lot of brushes, you'll find it pays to switch to Speed Sweep.

Write for styles, sizes and prices.

MILWAUKEE DUSTLESS BRUSH CO.
MILWAUKEE 3, WISCONSIN

If you write maker identify as IEN-222

FROM THE "JENNY" OF 1914 — TO THE "JET" OF TODAY...

FRASSE aircraft steels have played an important part in the growth of the aircraft industry. Through this close association, Frasse inventories of aircraft steels have kept pace with the industry's expanding requirements.

Current Frasse stocks include aircraft quality bars, sheets and tubing — in a complete range of sizes — all immediately available for direct shipment to your plant. Chemical certification is furnished for each shipment and Government inspection is available when required.

Government "Specs" covering aircraft steels are included in Frasse Data Chart Sec. D, No. 1. You'll find it a handy working tool. For a free copy simply write or call your nearest Frasse office.

Call FRASSE 1st for **AIRCRAFT STEELS**

Peter A. FRASSE and Co., Inc.

17 Grand Street, New York 13, N. Y.

Lyndhurst · Philadelphia · Buffalo · Syracuse

If you write maker identify as **IEN - 223**

Undoubtedly, you have used these bronze bars for making bearings, bushings, washers and thrust plates. Do you realize that it has exceptional properties for other uses? Bronze is easy to machine, it is non-sparking, is corrosion resistant. Many manufacturers find it ideal for certain gears and pinions, guide rollers, sheaves, trolley wheels, tips for air tools, etc. The cost per pound is offset many times by the low cost of machining alone. Other properties give it advantages over other materials. Write today for further information.

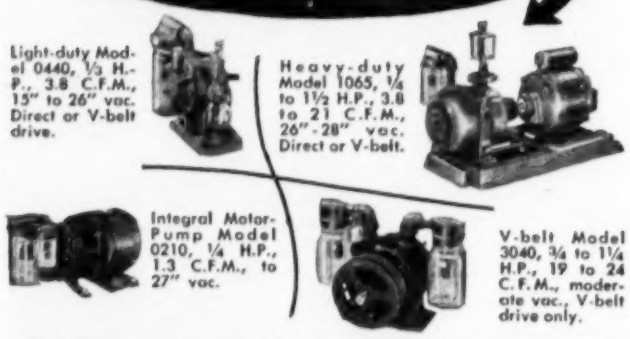
JOHNSON BRONZE COMPANY
476 South Mill Street, New Castle, Pa.

JOHNSON JB BEARINGS
Sleeve-Type

Available from stock at your Johnson Distributor's

If you write maker identify as **IEN - 224**

Specify these GAST rotary-vane VACUUM PUMPS to solve your original equipment problem—



CHOOSE FROM A WIDE RANGE OF SIZES, TYPES

Gain lower maintenance and higher performance for your own products. Select the pump that fits your application from any of these types — in numerous sizes and combinations. Choose integral-motor, V-belt or direct drives, with or without bases or accessories, such as lubricators, mufflers, fans, filters.

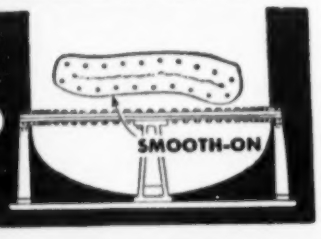
Get the complete story . . . see how Gast Dry Vacuum Pumps excel for vacuum feeding, holding, testing, filtering. *Write for Catalog and Application Ideas Booklet!*

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY — AIR MOTORS · COMPRESSORS · VACUUM PUMPS (TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 11b Hinkley St., Benton Harbor, Mich.

If you write maker identify as **IEN - 225**

To Repair A CRACKED CASTING



Smooth-On No. 1 Iron Cement, under a bolted patch plate, saved this large casting without the use of heat, when a long crack threatened to end its usefulness. This simple repair is typical of the countless uses that engineers, mechanics and maintenance men in industrial plants find for Smooth-On. They keep it handy for both emergency and routine maintenance repairs—stopping leaks, sealing cracks, tightening loose parts. If your supply house hasn't Smooth-On No. 1 in 1-, 5-, 20-lb. or larger size, write us.

FREE REPAIR HANDBOOK

Sealing cracks in apparatus and pipe lines is only one of the many time-saving, money-saving repairs this 40-page book will show you. 170 illustrations. Write today for YOUR free copy.

SMOOTH-ON MFG. CO., Dept. L
570 Communipaw Ave., Jersey City 4, N. J.

SO-319

Do it with SMOOTH-ON
THE IRON REPAIR CEMENT OF MANY USES

USEFUL INFORMATION
(Continued)

If you write maker identify as **IEN - 226**

ENGINEERS . . Making the supply stretch is described in booklet based on nationwide survey

National Society of Professional Engineers
1123 15th St. N. W., Washington 5, D. C.

Experience of some 500 companies employing 106,000 engineers among 2,750,000 persons is summarized in new 60-page booklet, "How to Improve the Utilization of Engineering Manpower". List price $2. Information includes how to make the existing engineering staff more effective, use of supporting personnel, are engineers' talents being wasted.

If you write maker identify as **IEN - 227**

FASTENINGS . . Free size gage to determine length and diameter of wood screws

Southern Screw Co.
P. O. Box 68-A, Statesville, N. C.

Clear markings on stainless steel are a feature of new 4 by 1⅜-in. Screw Gage, available without charge if you use wood screws. Please use your company letterhead.

If you write maker identify as **IEN - 228**

FASTENINGS . . Plastic slide selector gives dimensions and thread data for socket-head screws

Standard Pressed Steel Co.
Box 555, Jenkintown, Pa.

Sizes from No. 4 to 1 in. are listed on the face of new Unbrako Socket Screw Calculator. You move the slide of new 6½ by 3-in. unit to the screw size you want, then read dimensions of corresponding socket-head cap screws and stripper bolts. You also can read body drill size, tap drill size, number of threads. There is a table of decimal equivalents.

If you write maker identify as **IEN - 229**

FORGINGS . . Check chart suggests forgings as the answer to design problems involving metal parts

Drop Forging Association
603-7 Hanna Bdg., Cleveland 15, Ohio

Six important problems in product design are stated at the start of new 17 by 11-inch "Problem Parts Attack Chart". They range from cost and weight reduction to eye appeal and simplified production. The chart then suggests nine answers to each problem, based on the characteristics of closed die forgings. The chart folds to letter size.

If you write maker identify as **IEN - 230**

GRINDING . . Recommendations for titanium are summarized in new 24-page report on the subject

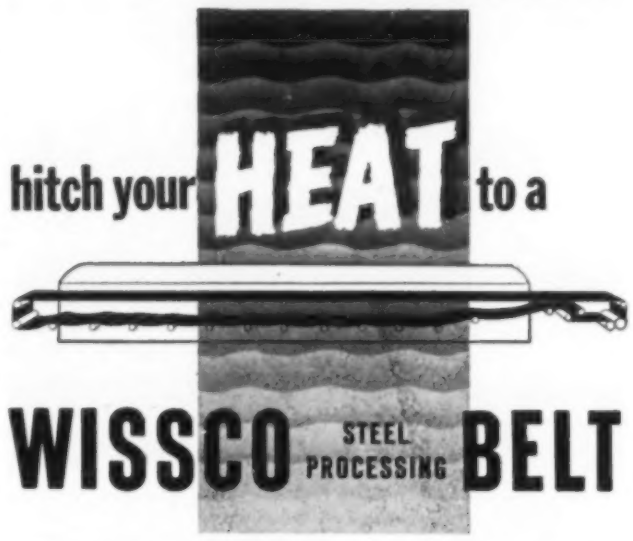
Norton Co.
36 New Bond St., Worcester 6, Mass.

Technical Bulletin 524 is a typewritten report by Dr. Leo P. Tarasov of the company's Research and Development Department. It carries the title, "Grinding Recommendations for Titanium", describes problems involved in grinding titanium, importance of the grinding fluid, wheel specifications, rates of cut, surface finish, abrasive recommendations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 231**

If you write maker identify as **IEN - 232**



Turn your products out faster, more economically in continuous straight-line production with a Wissco Belt. To order, write or call our nearest sales office.

THE COLORADO FUEL AND IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Atlanta • Boston • Buffalo
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1430

WISSCO BELTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION CF&I

If you write maker identify as **IEN - 233**

If you write maker identify as **IEN - 234**

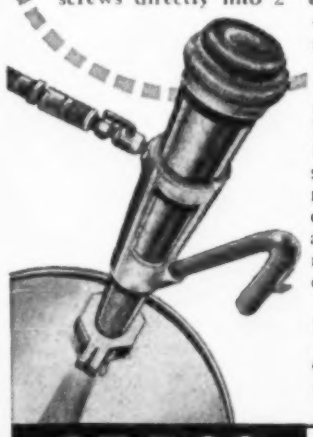
GET THIS NEW DRUM PUMP Idea Book!

New ideas in fluids handling

May we show you what this amazing little Fast-Flo Drum Pump has done in industry after industry?

An air-operated reciprocating pump, the 13½ lb. Fast-Flo operates on air as low as 35 PSI. It screws directly into 2" drum bung openings, or can be clamped on tank sides. *And Fast-Flo does not pressurize drums!*

Fast-Flo can transfer, agitate, dispense . . . and be used as a supply pump for applying, mixing or spraying. It handles an almost unbelievable range of materials, many as thin as isopropyl alcohol, many as thick as cookie frostings.



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GRACO Fast-Flo UNIVERSAL DRUM PUMP

One of the applications in this new Fast-Flo book may suggest a better way to handle one of your operations, saving time, labor and money. Write today!

GRAY COMPANY, INC.
GRACO SQUARE • MINNEAPOLIS 13, MINNESOTA
Regional Offices: New York, Philadelphia, Detroit, Chicago, Atlanta, San Francisco

If you write maker identify as IEN - 235

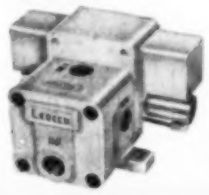
Get the Most Out of Your CYLINDERS with *Ledeen* valves

HAND OPERATED 4-WAY VALVE

Three models: Completely Manual—Spring Return to Neutral—Spring Return to Reverse. Flow cycles to handle most requirements.

FOOT OPERATED 4-WAY VALVE

Same as Hand Operated Valve, except foot operation replaces hand. Leaves hands free for other work.



POWER OPERATED 4-WAY VALVE

For remote control, safety or automatic equipment. Suitable for solenoid, cam, finger, toe or hand operation.

Ledeen valves are built in sizes from ⅛" to 1¼" standard pipe tap—to operate air and hydraulic cylinders and motors, single and double acting.

Write for Bulletin 1000

Ledeen Mfg. Co.
1602 San Pedro
Los Angeles 15, Calif.

VALVES • CYLINDERS
AIR-HYDRAULIC
PUMPS & BOOSTERS
VALVE ACTUATORS
AIR HOISTS

If you write maker identify as IEN - 236

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

- PREVENTS ACCIDENTS
- ONE MAN CAN OPERATE
- FIREPROOF
- WATERPROOF
- DURABLE—LONG LIFE
- DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

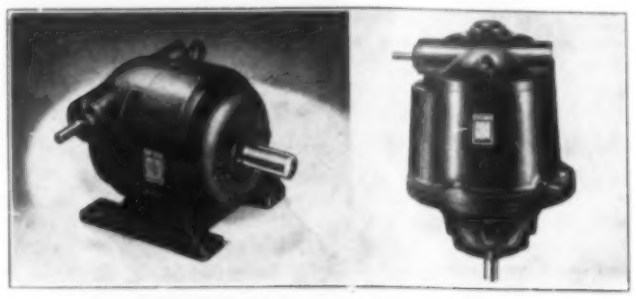
Be sure to write for illustrated literature and prices

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

If you write maker identify as IEN - 238

DRIVE . . Speed reducers, ¼ to 50 hp., 20.9 to 2,726 to 1 ratios

Source: FOOTE BROS. GEAR & MACHINE CORP.
4543-47 S. Western Blvd., Chicago 9, Ill.



Illustrated Details in Bulletin 1-103-B

Horizontal and vertical designs, including a worm and gear to position the drive shaft at 90 deg. with the output, have been added to the company's previously developed Line-O-Power straight line reducers. Both are available in ratios from 20.9 to 2,726 to 1. Transmission ratings are ¼ to 50 hp.

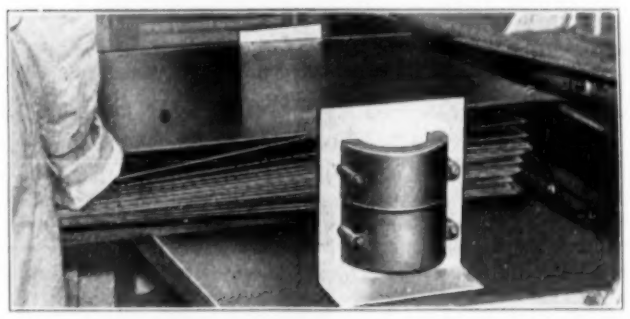
Type WL, to the left in the illustration, consists of the company's standard horizontal double reduction helical gear head with the addition of the self-contained worm-and-gear assembly. Type VWL, to the right, employs the vertical flange mounted double reduction Duti-Rated helical gear head with the addition of the same input assembly as that on Type WL. The vertical unit is available with a standard output shaft extension or with a wide low speed bearings span to take long unsupported extensions.

Engineering and application data including selection information, ratios, horsepower, output torque ratings are contained in a technical bulletin available upon request.

If you write maker identify as IEN - 239

HANDLING . . Magnetic separator "floats" ferrous sheets for hand feed

Source: CLARK-HOPKINS EQUIPMENT CORP.
1124 Spring Garden St., Philadelphia 23, Pa.

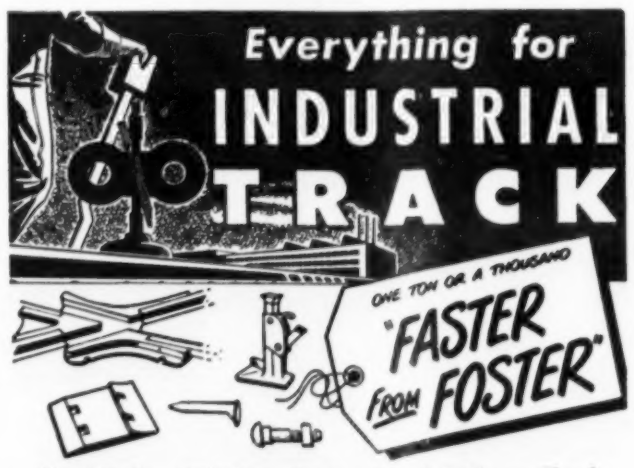


Available for trial and approval

Steel sheets are suspended free from each other at the top of a pile by the action of this new pair of permanent magnets. Each is mounted on a bracket shoe and the pair is located on the two sides of the sheet steel pile. An operator can take hold of the top sheet without difficulty or danger of cutting his hands as it floats free from the others. As each sheet is removed the next one comes up ready to be taken away or fed into a machine. A single magnet assembly is sufficient for small sheets. The pair is employed when the size increases. Four magnet sizes are 6½, 9, 10 and 15 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 240



Need Rails—Switches—Frogs—Guard Rails or Track Tools? For best selections and prompt deliveries—try FOSTER—shipments of most items can be made from stocks in our five nationwide warehouses.

RAILS—New and Relaying Foster stocks are being replenished daily. Any items we did not have last week, we'll probably have next week. We match specifications and sizes to meet all your requirements on any job, new installations or replacements. *Call on Foster for all your needs for Industrial Track Equipment and Supplies.*

Write for Track Equipment Bulletin IE-1.

L. B. FOSTER CO.

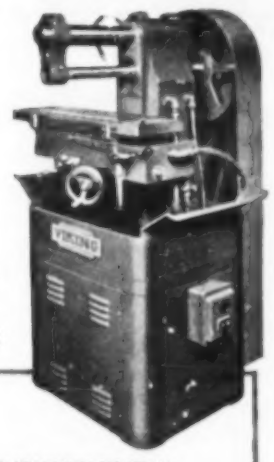
CHICAGO 4, ILL. HOUSTON 2, TEX.
PITTSBURGH 30, PA. NEW YORK 7, N.Y.

If you write maker identify as IEN - 241

The Versatile VIKING Hydraulic SPEED-MILL

For conventional and climb milling

IDEALLY SUITED FOR SECONDARY SCREW MACHINE WORK



- INFINITE VARIABLE SPEED WITH DIAL-CONTROLLED DRIVE
- AUTOMATIC HYDRAULIC CYCLING
- OVERSIZE DESIGN AND CONSTRUCTION
- HEAVY FLYWHEEL DESIGN GIVES SMOOTHER DRIVE, BETTER FINISHES
- ATTACHMENTS FOR VERTICAL MILLING
- QUICK SET-UP, EASY OPERATION

The new improved Viking Speed-Mill, ideal for secondary operation work in screw machine shops, is the answer to many light, production milling problems. With the Viking, small, light pieces requiring multiple cuts, good finishes, and close limits can be machined quickly, accurately, and economically. Set-ups are fast, operation is easy, even with relatively untrained operators. Automatic hydraulic cycling and infinite spindle speed variations assure higher production efficiency and longer cutter life.

BRIEF SPEC'S: 7-5/8" x 24-1/4" table. Cutting lengths up to 9", transverse movement, 2-5/4", vertical adjustment, 10". 2" dia. spindle; variable speeds 50 to 3600 r.p.m. Accommodates cutters up to 6" diameter.

Emergency delivery in less than 30 days. For complete information Write—

VIKING Industries

220 MONTAGUE ST. • ROCKFORD, ILLINOIS

If you write maker identify as IEN - 242

IT'S SUPERSAFE!

THE *New* IDEAL Voltage Tester

Every feature thousands of electrical men said they wanted including:

New... **Handier center prod mount**
Prod storage shields tips
Double strength seamless plastic case -- no surface metal

PLUS **"DOUBLE PROTECTION"**

. . . a solenoid, calibrated indicator, AND a neon test lamp, each independent of the other. YOU CAN'T FAIL TO DETECT VOLTAGE! . . . Also many other time-proven IDEAL advantages.

Tests 110 to 550 volts AC—110 to 600 volts DC

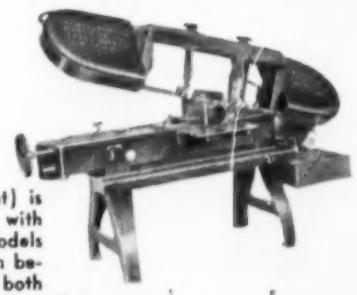
SOLD THROUGH LEADING DISTRIBUTORS. SEE IT NOW

IDEAL INDUSTRIES, Inc.
1108 Park Avenue, Sycamore, Illinois
Please send me full catalog information on new IDEAL Voltage Tester.

Name_____
Company_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 243

Here's cutting capacity that spells out P-R-O-F-I-T



First choice in plant after plant . . . and for several good reasons! W. F. Wells & Sons units give you longer blade life, sturdier construction for trouble-free service, many unique features of operation. Capacities range from 9" x 16" to 24" by 24". Model H (shown at right) is a hinge-type, economy model with hydraulically lowered frame. Models M, D, and J (Model M shown below with bar feed) feature both full and semi-automatic operation. Get the full story on these capable saws and accessories. Write today to W. F. Wells & Sons, ORIGINATORS of the electric band saw.

W. F. WELLS & SONS
Three Rivers, Michigan

If you write maker identify as IEN - 244

CUT SPRAYING COSTS with CO_2 POWERED GUN

NO HOSES • NO COMPRESSOR • NO ELECTRICAL OUTLETS • NOTHING EXTRA TO BUY!

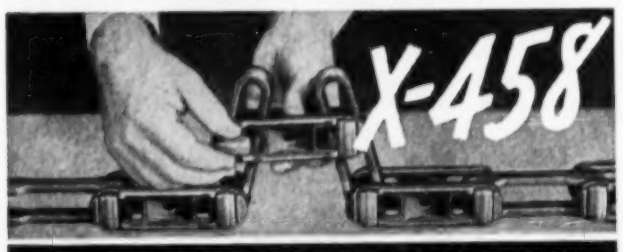
BECKER
PRESSURE-TYPE
SPRAY GUN
USED EXTENSIVELY IN FACTORIES, HOMES, FARMS, INSTITUTIONS

For:
- Paints
- Oils
- Varnishes
- Enamels
- Fire-Proofing
- Decorating

Handy for hundreds of industrial uses where expensive, heavy, cumbersome compressor type spraying is unnecessary. Becker Spray Gun is ruggedly built; heavy gauge (21 liquid oz.) steel container, cast aluminum head, brass and stainless inserts. Powerful CO_2 cartridges spray up to one container-full. See your Distributor or order direct, postpaid. Extra CO_2 cartridges at your dealer's or 10 for $1 postpaid.

SULLIVAN-BECKER CO., Dept. 193-A, Kenosha, Wis.

If you write maker identify as IEN - 245



CONVEYOR CHAIN

- **Interchangeable With Regular 4" Chain**
- **Assembled Or Disassembled Without The Use Of Tools**
- **Ultimate Strength Of 48,000 Pounds**
- **Widely Used On Floor; Overhead Conveyors Of All Types**
- **More Flexible On Vertical Bends**

Write for literature . . . or let us show you what this chain will do for you in your own plant.

5383

CONVEYOR ENGINEERS AND MANUFACTURERS
JERVIS B. WEBB COMPANY
8015 ALPINE AVE. DETROIT 4, MICH.
OFFICES IN PRINCIPAL CITIES
FACTORIES IN DETROIT . . . LOS ANGELES . . . HAMILTON, ONT.

If you write maker identify as IEN - 246

USE

METAL SAFETY TAGS
for Positive Identification
and safe, efficient handling

Materials and tools are efficiently separated, stock bins easily marked and shipping legibly identified when you use Pannier SAFETY TAGS. Durable, easily attached, and proof against defacing, these tags are supplied blank or with company name; are available in individual units or coiled lengths, and in tin, copper, brass, aluminum, steel, stainless steel and other metals .014" thick or lighter. Coiled tags are nicked for easy separation, and notched for proper feeding into Pannier or other embossing machines; are available with slots or holes as desired.

FREE DATA!
Ask for Bulletin D-10, giving full information about Pannier SAFETY TAGS and Embossing Equipment.

OFFICES: *Chicago • Los Angeles • Youngstown • Philadelphia • Jacksonville*

THE PANNIER CORPORATION
101 Pannier Building
Pittsburgh 12, Pa.

EXPORT DEPARTMENT: BESSEMER BLDG., PITTSBURGH 8, PA.

USEFUL INFORMATION
(Continued)

If you write maker identify as IEN - 247

MAGNESIUM . . Instructions on die casting cover alloys, equipment and recommended procedures

Dow Chemical Co.
913-17 Jefferson Ave., Midland, Mich.

Revised Bulletin DM-11C brings up to date the company's 18-sheet typewritten instruction book, "Die Casting Practice for Magnesium". It presents information on alloys recommended for die casting, machinery and other equipment, fluxes, melting, casting, refining scrap, quality control, suggestions on die-cast parts design, safety recommendations.

If you write maker identify as IEN - 248

MANAGEMENT . . Booklet on the company uses pictures to describe activities and products

Air Reduction Sales Co.
1656 Lincoln Bldg., New York 17, N. Y.

"Facts about Air Reduction" is new 32-page booklet that uses a deliberately simplified treatment to describe the company's business. Pictures and captions show products such as gases from air, welding and cutting torches, inert-gas-shielded arc welding equipment, other arc welding units, acetylene and its product, liquid and solid carbon dioxide, humane gases.

If you write maker identify as IEN - 249

MANAGEMENT . . Feeding plant workers to promote good employee relations described in booklet

Hotpoint Co.
255-59 S. Seeley Ave., Chicago 12, Ill.

"In-Plant Feeding" titles new 60-page information booklet written by Clarence W. Schroeder, company's chief food-service engineer. It tells how to establish a food service policy, what in-plant feeding can accomplish, how to choose equipment. Drawings present seven cafeteria layouts.

If you write maker identify as IEN - 250

MANAGEMENT . . Booklet describes the company to its customers, employees and people of the community

United States Rubber Co.
1230 Sixth Ave., New York 20, N. Y.

"You and U. S." is new 28-page booklet which takes you behind the scenes of the company. It tells in informal manner about past and present activities, products made for peace and war, who owns the company, people of the company, things the company stands for. A copy will be sent you on request.

If you write maker identify as IEN - 251

PLASTICS . . Instruction booklet on making duplicate models or molds from plastic

Kish Resin Inc.,
702 Sheridan St., Lansing 6, Mich.

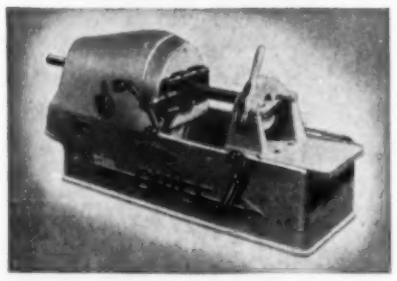
Shop practice is detailed in new 16-page "Phenolic Resins" booklet for preparation of a mold or model that is to be duplicated in plastic. This is followed by mixing instructions, use of the plastic as a putty coat, preparation of a foam-plastic core. Curves show bench life and curing time vs. hardness.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 252

A PAID NEWS ADVERTISEMENT BY GAINES-COLLINS

World's Fastest Pipe, Bolt and Conduit Threader Weighs Only 160 lbs!



Quijada Chief with Automatic Chuck will increase your production with far less operator effort, yet it's easily portable—use it anywhere, IN the shop or ON the job.

No more wrestling with stubborn chucks, no wrenches to worry about—now, with Quijada's patented Automatic Chuck you just flip a switch and four jaws front and rear instantly and automatically grip, center and turn pipe...another flip and pipe is released. Quick-Opening die heads give operator accurate control over thread lengths and eliminate back-off. Die head change is effortless and quick. Easily removable wheel type cutter is mounted on front jaw housing out of the way, thus the Chief is ideal for make-up and nipple work. Flat blade reamer attached to die head reams as you thread. Exclusive telescoping shaft eliminates outside oil hose line.

The Quijada Chief is a rugged, production machine built and guaranteed by

QUIJADA TOOL DIVISION OF **GAINES-COLLINS**
5474 Alhambra Ave., Los Angeles 32, Calif.

Manufacturers of Automatic Threaders and Cutters for more than a Quarter Century

• Write today for new catalog IE-1

If you write maker identify as IEN - 253

ACE PLASTIC EXTRUSION

PLUS FABRICATION

from Rods
Sheets, Tubes
Special Shapes

Extruded parts from the raw material to the finished product . . . an Ace specialty. Ace Plastic rods, tubes and shapes are custom extruded and machined *automatically* to your most exacting specifications. Let our engineers assist you with your plans.

WRITE TODAY FOR SAMPLES, send prints for quotations.

By the manufacturers of famous Ace Nylon Balls

ACE PLASTIC COMPANY
Precision Plastic Fabricators and Extruders
91-24 Van Wyck Blvd. • Jamaica 2, N. Y.

If you write maker identify as IEN - 254

You can salvage Valuable Parts—

—FOR LESS THAN 25¢!

Including Labor, Materials, Burden

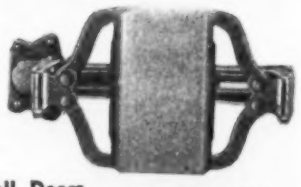
Elox Electron Drills* are *production* machines designed for fast removal of broken taps, drills, studs, etc., without harm to thread or wall, sticking or welding. Most units are completely self-contained, easily transported and come ready to plug in. As simple to operate as any drill press, Elox Electron Drills* are an insurance against loss of time, money and materials. Throughout the world, Elox machines salvage millions of dollars of work each year. Check your scrap today. There's an Elox Electron Drill* priced for any industrial requirement. Write today.

ELOX CORPORATION OF MICHIGAN
724 N. Rochester Road
CLAWSON, MICH.

If you write maker identify as IEN - 255

Stop Slamming Doors!

KANT-SLAM Door Check



Closes Large or Small Doors, Screen Doors and Gates—Easily, Gently, Smoothly

Stops Slamming . . . Banging . . . Broken Door Glass . . . Insects . . . Drafts . . . Heat Loss

$9.95
DELIVERED

THOUSANDS IN DAILY USE IN EVERY STATE IN U. S.

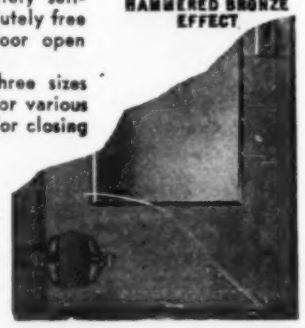
SCHOOLS, HOSPITALS, FACTORIES, WAREHOUSES, OFFICES, INSTITUTIONS PUBLIC BUILDINGS

ATTRACTIVE, DARK BRONZE, METALLIC LACQUER FINISH—HAMMERED BRONZE EFFECT

KANT-SLAM closes doors with efficiency of human hand. Hydraulic action—NOT an air check—piston works in oil. 3 years trouble-free service guaranteed. Price about half of other hydraulic controls.

Works any place along hinge side of door—top, middle or bottom—either right or left hand doors. KANT-SLAM is completely self-contained—door and hinges are absolutely free of any strain or pressure. Holds door open when past 90 degrees.

Only one size Check required—three sizes easily detachable springs available for various size doors. Simple screw adjustment for closing speed.

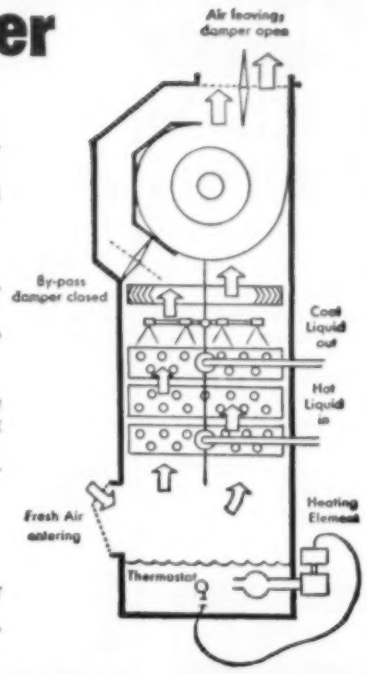


Order on 30 Days FREE TRIAL—or Write for Complete Details

KANT-SLAM Door Check Co.
200 W. Spring St., Bloomfield, Ind.

If you write maker identify as IEN - 256

NIAGARA Aero Heat Exchanger



1. Extends quenching capacity without extra water or cooling tower.
2. Quickly pulls down heat at initial peak load of Quenching.
3. "Balanced Wet Bulb" Control holds quench bath at proper temperature, heating if needed to start after shut-down, and cools or heats by automatic control.
4. Saves cleaning expense as compared to cooling tower which picks up acids and fumes from air.

APPLICATIONS

Quench Oils
Cutting Oils
Lubricating Oils
Cooling Water

For help in increasing production, saving of cooling water, write for Bulletin No. 120. Address

NIAGARA BLOWER COMPANY

Over 35 Years of Service in Industrial Air Engineering

Dept. EN, 405 Lexington Avenue New York 17, N. Y.

Experienced District Engineers in all Principal Cities of U. S. and Canada

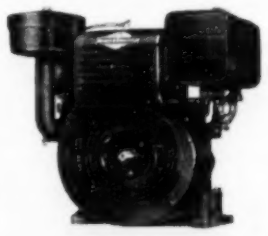
If you write maker identify as IEN - 257

THE GREATEST SERVICE ORGANIZATION OF ITS KIND IN THE WORLD...

Near you there is a Briggs & Stratton service organization — factory trained and supervised — ready to tune up, repair, or even rebuild your Briggs & Stratton 4-cycle air-cooled engines with *original* parts.

If your Briggs & Stratton engines are not busy during these winter months, now is the ideal time to have them serviced — to insure continued peak performance for busy periods ahead.

Only Briggs & Stratton maintains such complete world-wide authorized service facilities — a big "plus" that you get only when you specify Briggs & Stratton engines on the gasoline powered equipment you buy and use.



Briggs & Stratton Corp., Milwaukee 1, Wisconsin, U.S.A.

In the automotive field Briggs & Stratton is the recognized leader and world's largest producer of locks, keys and related equipment.

If you write maker identify as IEN - 259

DRIVE . . Roller chain and sprockets with split bushings

Source: BROWNING MFG. CO.
16 Chester St., Maysville, Ky.

Price sheet CD101-A

The company announces new application of its unbreakable malleable split taper compression bushings, previously developed for its lines of sheaves, couplings and pulleys, to its chain and sprocket drives. The new line includes chain ranging from ⅜ to 1¼ in. and sprockets in 208 stock sizes machined from steel and fitted with the split taper bushing. Sprocket tooth range is from 11 to 112. Stock bores are from ⅜ to 1 inch. Application can be made on different diameters by interchanging the bushings.

If you write maker identify as IEN - 260

TRUCK . . Hand service cart for tools, product parts, supplies

Source: ANGLE STEEL INC.
452 Thomas St., Plainwell, Mich.

Ask for Bulletin 101

No. 250 is a new unit in the company's line of hand trucks. It is mounted on two swivel and two rigid rubber tired 5-in. casters. It measures 30 by 16 by 32 inches. Two shelves are made of 13-gage steel with sides and ends 3 in. in height. The corners are ¼-in. angles. Finish is green enamel. The cart is shipped knocked down with the required bolts, nuts and lock-washers ready for assembly on the job.

If you write maker identify as IEN - 261

RESISTOR . . Wire wound design, oval steatite core, 10 and 15 watts

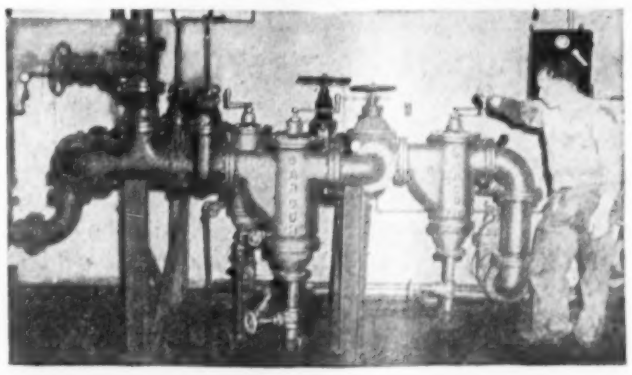
Source: MILWAUKEE RESISTOR CO.
708 W. Virginia St., Milwaukee 4, Wis.

Sample on request

High rating in small space, 15 watts in ⅜ by 1 in., characterizes the construction of this new oval type resistor. The wire is wound on an oval steatite core. It is equipped with silver solder connections and is coated with brown vitreous enamel. An aluminum mounting strip promotes cool operation by its ability to dissipate heat through its close contact with the ceramic core. Spacers are attached to the aluminum strip for stack mounting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . *See Page 50*

If you write maker identify as IEN - 262



Strainer Screens kept clean automatically

Unless the screens of pipeline strainers are frequently cleaned, they eventually clog. The production time lost by the shutdown to remove and clean the choked screen, and the labor involved, can be saved by installing Sarco Scraper Strainers, as illustrated. A few turns of the handle scrape the inside of the screen clean and assure continuous operation.

Our photo was taken at Monroe Paper Products Co., Detroit, where three 6" Sarco type VRS scraper strainers take care of river water.

For full information write for Bulletin 1225-4 to *Sarco Company, Inc., Empire State Bldg., New York 1, N. Y.*

Advt. 617

If you write maker identify as IEN - 263

The most versatile fork truck of 2000 lb. rating. 130" lift with ample stability...60" turning radius *plus* inclined automotive steering...foot pedal acceleration . . . convenient controls and many other design advancements. For complete details request Bulletin 295.

MERCURY MANUFACTURING COMPANY

4132 S. Halsted Street • Chicago 9, Illinois

If you write maker identify as IEN - 264

If you write maker identify as IEN - 265

Proof of Top Preference for

3 to 9 hp.

WISCONSIN HEAVY-DUTY *Air-Cooled* **ENGINES**

Based on data contained in a "Facts for Industry" report released on Sept. 5, 1952 by the U. S. Bureau of the Census, an aggregate average of 50.61% of all carburetor type internal combustion engines produced during 1950-'51 within an 11 to 175 cu. in. displ. range (approx. 3 to 40 hp.) were WISCONSIN HEAVY-DUTY AIR-COOLED ENGINES (exclusive of aircraft, automotive, outboard marine and "captive" engines built by various manufacturers for use on their own equipment).

7 to 14½ hp.

Here is positive proof of top preference for Wisconsin Engines both by original equipment manufacturers and users of power-operated equipment. These engines have been *pre-judged* and *pre-selected* by more power-wise purchasers than all other makes of engines combined, within a 3 to 40 hp. range.

Perhaps it's your turn to specify "Wisconsin". Descriptive literature and engineering data on request.

15 to 36 hp.

MOST H.P. HOURS

WISCONSIN MOTOR CORPORATION

World's Largest Builders of Heavy-Duty Air-Cooled Engines

MILWAUKEE 46, WISCONSIN, U. S. A.

Cable Address: "WISMOTORCO"

If you write maker identify as IEN-266

NEW IMPROVED

HAND SCRAPERS

with just the correct spring

and other features never before incorporated in any hand scraper

This new Hand Scraper, Model No. 5, is the most improved tool of its kind ever produced. Light in weight, easier to use with palm fitting comfort grip, faster cutting. Rubber handle swivel pad, at small extra cost, for those who place scraper handle against body for extra leverage. Three sizes: 18"—20"—22" long. Furnished with high speed steel or Carboloy Blades. Cost less than home made scrapers.

Write for Bulletin No. 35-1

Anderson BROS. MFG. CO.

ANDERSON BROS. MFG. CO., ROCKFORD, ILL.

If you write maker identify as IEN-267

MODERN TIME AND COST SAVERS BUILT BY... Standard GRAVITY & POWER CONVEYORS

FASTER HANDLING IN SHIPPING ROOMS . . . with the HANDIBELT

Conveys bags, cartons, boxes horizontally or at any decline and incline angle within its range. Easily wheeled about by one man — easy to adjust and use — fits in crowded aisles, cars and freight elevators. Handles packages up to 135 lbs. TWO SIZES: No. 11 Handibelt, 11 ft. long, piles to 7 ft. 6 in; No. 16, 15 ft. 9 in. long, piles to 10 ft. 6 in. Write for HANDIBELT Bulletin — address Dept. IEN-13.

STANDARD CONVEYOR COMPANY
General Offices: North St. Paul 9, Minn.
Sales and Service in Principal Cities

If you write maker identify as IEN-268

KIT CUTS COST— CUTTING KEYWAYS

Cut one keyway with this handy du Mont *Minute Man* Keyway Broach Kit and you've most paid for the whole Kit and kaboodle!

Cuts keyways *in one minute* — any standard width 1/16" to 1" in any bore ¼" to 3" — for as little as one penny per keyway. Try it!

The du MONT CORPORATION, Greenfield, Mass.

SEND FREE CATALOG and PRICE LIST N covering all Minute Man Keyway Broaches and Kits to:

Name .....

Company .....

Address .....

SEE YOU AT THE PLANT MAINTENANCE SHOW
BOOTH 112 • JANUARY 19-22 • CLEVELAND

USEFUL INFORMATION
(Concluded)

If you write maker identify as IEN-269

PRINTING . . What not to photocopy, according to Federal law, is listed in new wall chart

Peerless Photo Products Inc.
652 Tesla Road, Shoreham, N. Y.

Items illegal to copy by photographic means are listed in new 9 by 12-in. wall chart which the company offers to send you on request. These items include paper currency, stamps, draft cards, and various types of certificates and licenses. A note warns to check legality if in doubt.

If you write maker identify as IEN-270

PROTECTING . . Safety in the laboratory is described in detail by 48-page instruction manual

Fisher Scientific Co.
719 Forbes St., Pittsburgh 19, Pa.

New edition of the company's "Manual of Laboratory Safety" will be sent you on request. It starts with a section on how to prevent accidents in the laboratory, continues with information of first aid, fire fighting, safety equipment available, items that promote safety such as plastic ware.

If you write maker identify as IEN-271

TESTING . . X-ray spectrograph chart shows beams for elements from sodium to uranium

North American Philips Co.
748-52 S. Fulton Ave., Mount Vernon, N. Y.

New chart will be sent on request to assist in X-ray spectrograph theory and application. It measures 17½ by 22½ in., shows characteristic secondary X-ray beams for elements from sodium with an atomic number of 11 to uranium, atomic number 92. Curves appearing on the chart are plotted against two-theta degrees on the spectrograph and also against wavelength in Angstrom units.

If you write maker identify as IEN-272

VALVE REPAIR . . How to fix a faucet by using replaceable seat is described in booklet

Economy Valve Seat Co.
1438 N. Keating Ave., Chicago 51, Ill.

Informal style of presentation is employed in new 8-page pocket booklet, "Biography of Mr. Faucet", which the company will send you on request. It tells about faucet troubles in three groups that carry titles of The Drip, The Noisy and The Stripped. It points out advantages of using the company's replaceable bronze seats to repair unsatisfactory faucets.

If you write maker identify as IEN-273

WEIGHING . . How to use a laboratory balance described by booklet that includes a check procedure

Christian Becker
Colfax & Monehegan Sts., Clifton, N. J.

How to choose the proper location for an analytical balance is one of the first instructions given in new 32-page booklet, "Care and Use of Analytical Balances". Other instructions cover assembly, general precautions in use, methods of weighing, cautions in weighing procedures, daily routine of care, method of checking performance of the balance.

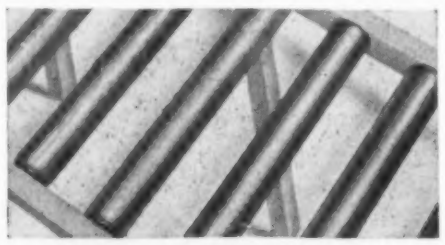
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-274

A PAID NEWS ADVERTISEMENT BY SAMUEL MOORE & CO.

PLASTIC COATED CONVEYOR ROLLERS

Resist corrosion, reduce maintenance, conserve critical materials.



A new use for Dekoron plastic armored metal tubing as conveyor rollers is announced by the manufacturer, Samuel Moore & Company.

The patented Dekoron process extrudes a thick coating of semi-rigid vinyl or other plastic over ordinary steel tubing used for conveyor rollers. This design renders the rollers impervious to corrosive effects of moisture, salt, acids, alkalis, or corrosive atmospheres which ordinarily require expensive stainless steel rollers.

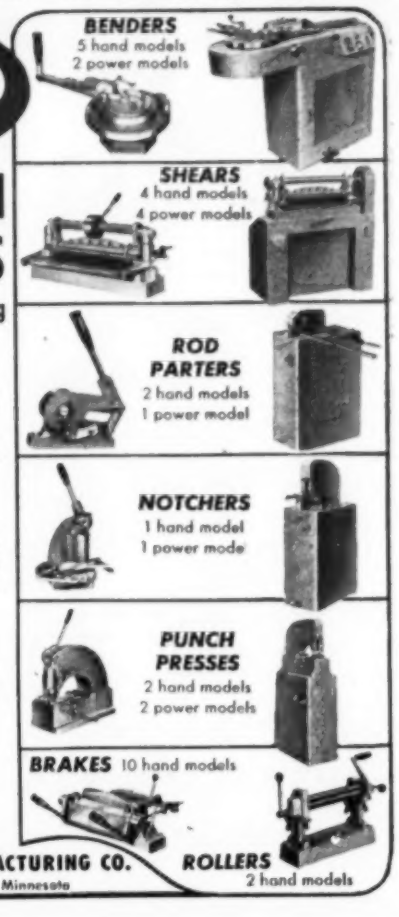
Furthermore, the roller always presents a clean surface, thus eliminating contamination of work in process and reducing need for disassembling, cleaning, and repainting rollers.

Dekoron plastic armored metal tubing is used in many other industrial and consumer applications such as instrument lines, furniture, guard rails, appliances, etc.

For more data on coating conveyor rollers, write Samuel Moore & Company, Dekoron Tubing Div., Mantua, Ohio.

If you write maker identify as IEN-275

di-acro PRECISION MACHINES for Die-less Duplicating



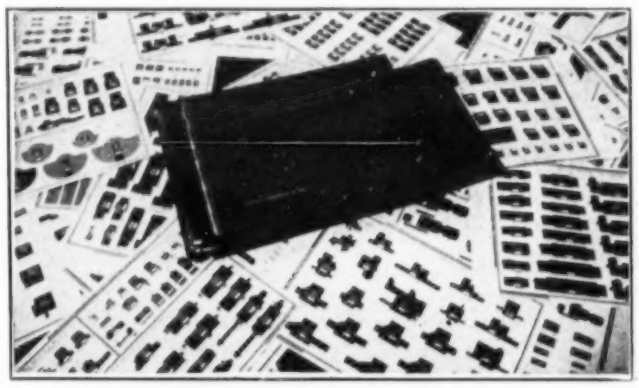
NEW CATALOG
packed with ideas for making parts by "Die-less Duplicating" —the money-saving, time-saving technique Di-acro created.

BENDING MANUAL
gives exact methods for bending processes in a variety of materials. Over 90 diagrams and charts with tooling suggestions.

Sent on Request

O'NEIL-IRWIN MANUFACTURING CO.
318 8th Ave., Lake City, Minnesota

If you write maker identify as IEN-276



Scale is ¼ inch to the foot

NOW READY FOR DELIVERY!

5,000 templets of machine tools and equipment on film for layout planning

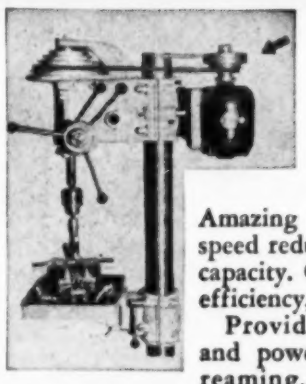
The Repro-Templet Master Planning File will be shipped immediately on receipt of purchase order. We will ship it for examination upon request of your purchasing department.

$650 express prepaid

REPRO-TEMPLETS INC.
Oakmont, Allegheny County, Penna.

If you write maker identify as IEN-277

New "PULL-GEAR" SPEED-REDUCING PULLEY Increases Drill Press Capacity



Amazing new internally geared speed reducer doubles drill press capacity. Greater power, greater efficiency, greater productivity.

Provides the correct speed and power for larger drilling, reaming, tapping and boring on light presses. Easily installed in five minutes. Adaptable to all type machines. Spindle speed range approximately 45 to 2000 RPM. Write for literature.

Made in 3 Motor Shaft Sizes ½" • ⅝" • ¾"

Some Territories Open to Jobbers

THE PULL-GEAR CO.
21125 Dequindre St. Hazel Park, Michigan

WRITE FOR LITERATURE

If you write maker identify as IEN - 278

MACHINE LOADING, SCHEDULING DISPATCHING AND JOB ASSIGNMENT

Bulletin outlining procedure widely used for these cost-cutting results now available:

Visual Scheduling . . . a glance at Board shows work ahead for each machine or man.

Order Sequence . . . quickly indicated by arrangement of tickets representing orders.

Schedule Changes . . . easily specified by rearranging tickets in revised sequence.

No Delay Between Planning and Dispatching . . . no lists or records to write.

Operation According to Plan Assured.

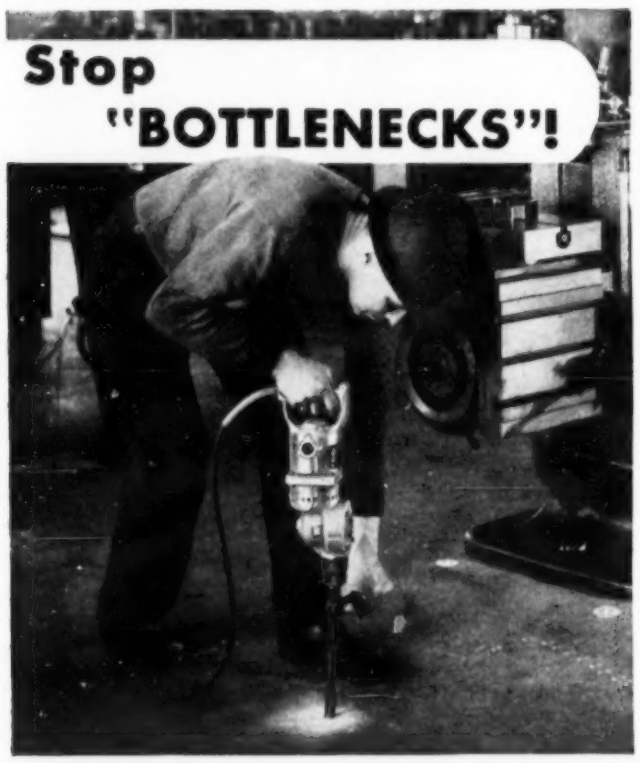
Readily Adapted . . . to production, assembly, maintenance, engineering and work of every variety, using work orders, time tickets, move tickets, tabulating cards, etc., and McCaskey Machine Control Boards.

Write today for your copy of illustrated Bulletin A-630 IEN containing all the facts

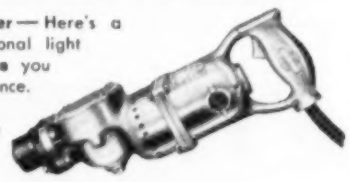
The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

If you write maker identify as IEN - 279

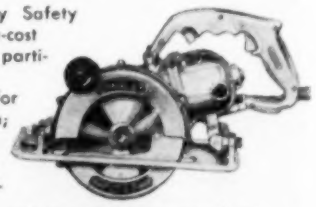


Your maintenance men need these modern Stanley Electric Tools to speed-up installation and repair work . . . to keep expensive production machines and personnel working at top efficiency.



No. 310-A Electric Hammer — Here's a powerful hammer of exceptional light weight, ruggedly built to give you years of time-saving performance. Use it on concrete, stone, brick, or for chiseling wood. Plug into any light socket; has smooth, "no-jolt" action.

No. 160 Series Electric Drills — Packed with surplus power, these streamlined Stanley Drills have removable chuck guards to protect operator's hand . . . make fast, accurate drilling safe and easy. Available with regular or pistol type grip for all standard voltages, A.C. or D.C. Sizes: ¼", ⅜", and ⅜".



W7 Electric Saw — This Stanley Safety Saw is indispensable for fast, low-cost maintenance and construction of partitions, offices, shelves, or flooring. Features include: Duplex handle for convenient gripping in any position; depth of cut adjustment to 2½"; tilting base graduated for bevel cuts to 45°; automatic safety guard.

Don't wait for a costly "bottleneck" in your plant before investigating these Stanley maintenance money-savers. See your dealer or write for Electric Tool Catalog. Stanley Electric Tools, 414 Myrtle Street, New Britain, Conn.

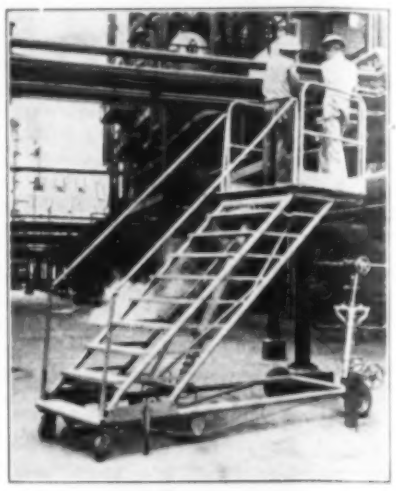
STANLEY
Reg. U.S. Pat. Off.

HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

If you write maker identify as IEN - 281

SCAFFOLD . . Elevating platform is wheel mounted for portable uses

Source: WEBER AIRCRAFT CORP.
2818-22 Ontario St., Burbank, Calif.



Tubular steel frame

Aerostand 10E, shown in the illustration, is one of the new standard units in the company's line of portable elevating platforms to position workers for overhead operations in both construction and maintenance. Platform area measures 16 square feet. A manually operated hydraulic pump raises the platform to any position from 3 to 10 ft. above the floor. This can be increased to 14 ft. by adding a No. 4 Aerostand. Other combinations of the unit permit maximum elevation to 24 feet.

Single units can be used by one or two workers as shown in the illustration. A pair of these units, side by side, can be bridged with a platform section. Four can be assembled to make the corners of a square platform surrounding a work area. The line is completed with a crane attachment that mounts on the work platform to handle loads to ½ ton. Floor locks hold the assembly in steady position.

If you write maker identify as IEN - 282

WELDING . . DC arc machine, engine drive for construction plant

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

Operates anywhere

Operating range is between 40 and 250 amp. on this new Type WD42AGE engine driven arc welding machine. Nominal rating is 200 amp. on a 60 per cent duty cycle. The assembly consists of the company's Type WD42 generator and a Wisconsin air cooled gasoline engine. Mounting is on a structural base to fit across the floor of a standard pick-up truck.

Engine or the generator can be removed for repair and replaced by a stand-by unit. The engine control maintains idling operation when the welder is not being used. Forced ventilation holds temperature within safe limits at the rated load on steady operation. Overall dimensions are about 49 by 25 by 37 inches. Assembly weight of the new machine is 690 pounds.

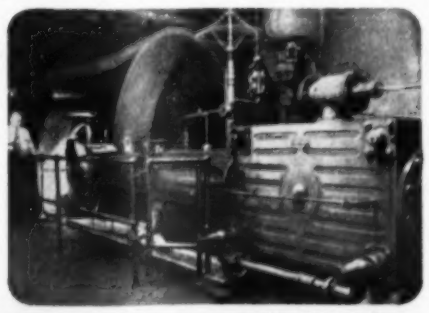
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 283

Demonstrating the Dependability of

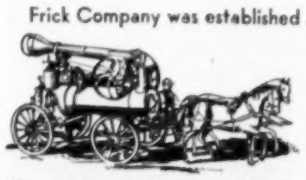
FRICK

Equipment



The portable steam engine shown at left was operated in Virginia from 1872 to 1949: the Corliss type above, built in 1891, is still running at Irwin, Penna. Another Frick Corliss, shipped in 1888, is still going strong at Weldon, N. C.

Frick Company was established a century ago for making engines and farm machinery. For over 70 years it has pioneered in building refrigerating and air conditioning systems. Frick compressors commonly achieve service records of 40 years; many have run 50; some even 60!



This portable engine still runs after 72 years' active service.

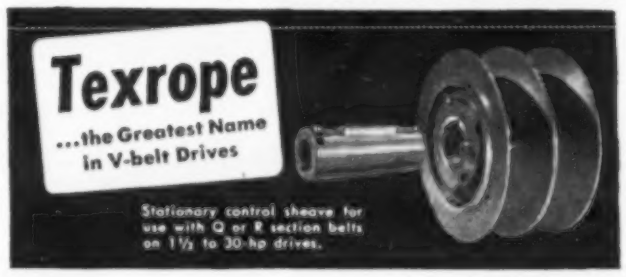
The whole story of Frick equipment is told, with 200 illustrations, in the Centennial History just published: send $1 for your copy.

For dependable air conditioning, refrigeration, ice making or quick-freezing service see your nearest Frick Branch or Distributor.

The largest Frick refrigerating machine ever built (1896), was 50 ft. long: in service for Armour 40 years.

FRICK CO.
WAYNESBORO, PENNA. U.S.A.
Also Builders of Power Farming and Sawmill Machinery

If you write maker identify as IEN - 284



NOW — Wide Range Vari-Pitch Sheave has 3 New Advantages!

1. *Magic-Grip Mounting*—Only one screw makes or breaks vise-like grip of sheave bushing on motor shaft. Fast, easy mounting.
2. Fast adjustment — Simply turn single adjusting screw, using lever rod. No fumbling with screwdrivers.
3. Adjusts from either side — Mount sheave so adjusting screw is either toward or away from motor bearing, whichever way it is more accessible.

Get complete facts in data sheet 20S7811. Ask your nearby Allis-Chalmers distributor, district office, or write Allis-Chalmers, Milwaukee 1, Wisconsin. A-3840

Texrope, Vari-Pitch and Magic-Grip are Allis-Chalmers trademarks.

ALLIS-CHALMERS

If you write maker identify as IEN - 285

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

If you write maker identify as IEN - 286

CUT IDENTIFICATION COSTS

with BRADY Printed Self-sticking ROLL TAPES

SAVE OPERATORS TIME • ELIMINATE WASTE MOTIONS • GET QUICK, POSITIVE IDENTIFICATION

Label parts, pieces, assemblies, materials, etc., with Brady Printed Tape. Sticks to any clean, dry surface without moistening. Applied by hand or automatic dispenser.

Any wording, numbers, letters, trademarks or symbols printed to your order on cellophane, acetate fibre, paper or cloth tapes to fit your job requirements.

Choose from a variety of standard colors, roll lengths and widths.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTED IN 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS

WIRE MARKERS · PIPE MARKERS · SAFETY SIGNS · PRINTED ROLL TAPE · MASKS & STENCILS

W. H. BRADY COMPANY

769 W. GLENDALE AVE., MILWAUKEE 12, WIS.

If you write maker identify as IEN-287

More and more leading band-saw machine manufacturers are standardizing on Carter Guides for economical, trouble-free operation.

*Write for Catalog

CARTER PRODUCTS COMPANY, INC.

420 Wm. Alden Smith Bldg. 30 Ionia Ave., S. W.
Grand Rapids 2, Michigan

If you write maker identify as IEN-288

NEW

TRUMBULL ELECTRIC

STYLE **HCI** *Side Operated*

***Standard Duty* SAFETY SWITCH**

Complete safety, rapid wire-in, compactness, simplified service. Pole units identical with advanced quick-break arc-quenching design used in Trumbull HCI heavy duty switches. All current carrying parts silver plated.

TOP QUALITY — AT COMPETITIVE PRICE

Capacities: 30, 60, 100 and 200 ampere, including 2- and 3-pole, 3- and 4-pole (solid neutral), and 4-pole in 30 through 100 ampere, fusible and no fuse; 240, 480 and 600 volt A.C., 250 and 600 volt D.C. — all H.P. rated. Meets NEMA Type A Specifications.

Safety Features: Provision for padlocking enclosure catch, and handle in either position. Clear ON-OFF, cover and interior marking.

Mounting: Unusually compact. Can be closely ganged (200 ampere switch requires only 4½" between sides). Ring handle can be hook stick-operated.

Order from your Trumbull Distributor. Or write direct for more details.

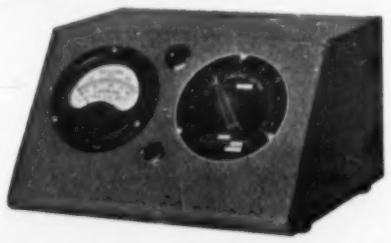
TRUMBULL ELECTRIC

DEPARTMENT OF GENERAL ELECTRIC COMPANY
PLAINVILLE, CONN.

If you write maker identify as IEN-289

TEMCOMETER

Temperature Controller and Indicator



Combines in a single, compact unit an advanced type of input controller and an indicating pyrometer. Unlike other type controllers, the *Temcometer* automatically maintains even temperature regardless of fluctuations in line voltage. A sensitive panel-operated thermostatic switch can be set to regulate current input into the heating equipment anywhere from 5% to 100% time "on."

Originally designed as a built-in feature of Temco electric furnaces, this complete control unit is now made for use with other makes of furnaces and electric heating devices.

Made both with and without pyrometer for maximum loads ranging from 2.3 to 5.7 kw. Priced from $38.50 to $62.50.

Write for new handy Reference File and dealer's name.

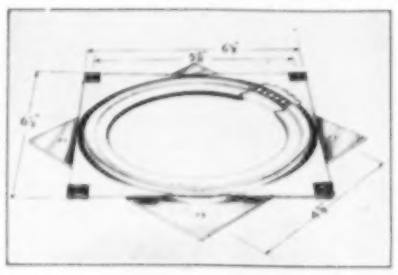
THERMO ELECTRIC MANUFACTURING CO.

482 Huff St., Dubuque, Iowa

If you write maker identify as IEN-290

BEARING . . Ball and plate design supports a revolving seat or surface

Source: TRIANGLE MFG. CO.
380 Division St., Oshkosh, Wis.



Immediate delivery

Lazy Susan designates a new bearing consisting of two formed steel plates and a circle of steel balls. The plates measure 6⅛-in. square. Seventy heat treated balls are clamp-locked into the race so they rotate freely but cannot get away. Typical applications include revolving top trays and shelf assemblies, turntables, revolving stool and boat seats, toys. Factory assembled locknuts are provided on the four corners of the upper plate. The lower plate is drilled for anchor screws.

If you write maker identify as IEN-291

FABRIC . . Nylon flannel, double faced, white, non-flammable

Source: BURGESS-BERLINER ASSOCIATES
2708-12 South Parkway, Chicago 16, Ill.

Ask for test sample

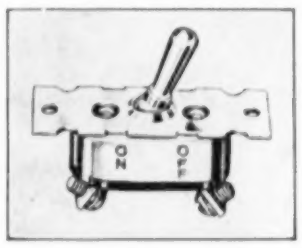
Flalon is a new woven thickly napped double face white flannel made of crimped heat set virgin Nylon. The material is supplied in rolls 54 in. in width by 25 yd. in length. Weight is about 1 lb. per square yard. Thickness is about $\frac{5}{16}$ inch.

The fabric is non-flammable, quick drying, non-absorbent and resistant to heat and abrasion. It will not rot or mildew, shrink, stretch, curl or distort. It has good tensile strength. Applications include padding, filtering, upholstering, gaskets.

If you write maker identify as IEN-292

SWITCH . . Toggle operated, single pole design for control circuit

Source: ARROW-HART & HEGEMAN ELECTRIC CO.
101-5 Hawthorne St., Hartford 6, Conn.



Ask for sample

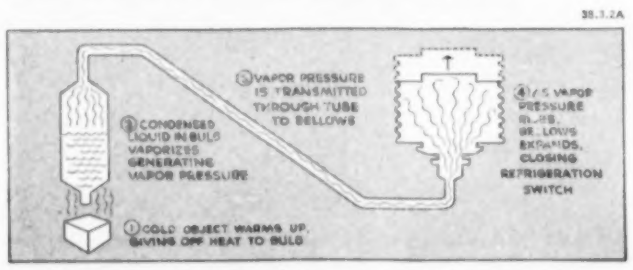
New switch has been designed for aircraft service to meet requirements of Specification MIL-S-6745 and Air Force-Navy Standard Drawing AN3022. The switch is available in two and three position design, single pole type, with momentary or maintained contacts. The toggle lever can be specified plain, or with radioactive or fluorescent tip. The mounting plate measures 2⅛ by ¾ inch. Depth, including terminals, is a little over 1 inch. Toggle lever length is ⅞ in. and has a total movement of 40 deg. in the two position model or 50 deg. in the three position design.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-293

A PAID NEWS ADVERTISEMENT BY CLIFFORD MFG. CO.

VAPOR PRESSURE bellows system for temperature control and indication.



Control system used in refrigeration has wide application in other industries with temperature control problems

For close temperature control, Westinghouse and other leading refrigerator manufacturers depend upon the positive-acting components of the Clifford vapor-pressure bellows system. This can be designed to be a "fail-safe" device to prevent overheating even if bellows itself fails. Systems available with bulb at highest or lowest temperature point or where bulb will operate at temperatures higher or lower than the rest of the system. Adjustment is generally obtained by spring loading against bellows pressure. Only short bellows travel is required.

Other common applications of Clifford's vapor pressure bellows systems are temperature regulators for water heating and cooling tanks, steam cookers, acid baths, tempering baths, glue heaters, etc. Clifford is glad to answer your specific questions and provide "bellows-engineering" help.

Write for bulletin: "What To Consider When Selecting Metallic Bellows."

CLIFFORD MANUFACTURING COMPANY
146 Grove Street, Waltham 54, Mass.
Division of Standard-Thomson Corporation

If you write maker identify as IEN-294

NEW MANCO

HYDRAULIC RIVETER

Here's fast, silent, and powerful hydraulic riveting. Riveting cycle only one second. Easy-to-operate hand lever valve mounted on riveting head. No solenoids. Capacity for ¼" and 5/16" rivets. Adjustable pressure setting for use on straight and shoulder rivets. Riveting yoke reach is 1¾" with a gap of 1⅜" including rivet sets. Other yokes also available. Full swivel about cylinder axis permits easy placement. Compact electric hydraulic pump. Weight of riveting head . . . 18 lbs.

Model R-211-188E

Other Manco Riveters are available with capacities from 10 to 150 tons. Send us your riveting problem.

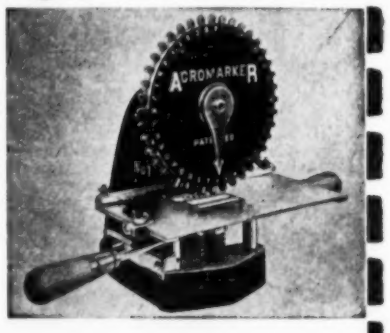
MANCO *mfg. co.*
Bradley, Illinois

If you write maker identify as IEN-295

POWER IN MARKING TO LIFT A HOUSE

The Screw Pressure Principle of the **ACROMARKER** NAME PLATE AND PARTS STAMPING MACHINE makes it adaptable to stamping steel and all other metals and materials.

ASK FOR PRICES AND LITERATURE



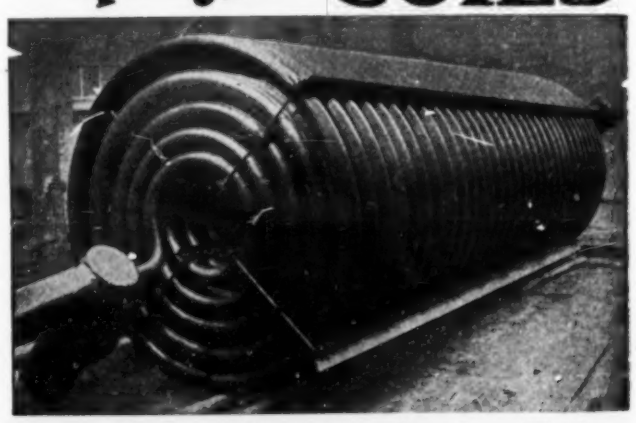
The **ACROMARK** *Company*

7 MORRELL ST., ELIZABETH 4, N. J.
"THE ORIGINAL MARKING SPECIALISTS"

If you write maker identify as IEN-296

PITTSBURGH COILS

a air p pressure t tested



Pipe Coils • Bends • Boiler Tubes

Built for your particular needs. Send blue print or rough sketch for Pittsburgh quotation. Also air-pressure tested Welded Headers, Welded Ammonia Receivers, Accumulators, Pipe Coils, Bends, Boiler Tubes. "Let us quote!"

Ask for Pipe Coil Data Book

Pittsburgh Pipe Coil & Bending Company
Division of Pittsburgh Standard Conduit Co.
61 BRIDGE STREET ETNA, PITTSBURGH 23, PA

If you write maker identify as IEN - 297

NEW Safety Goggles

Now . . . 2 New
AO COVERGLAS GOGGLES
Fit Over Safety and Personal Glasses

AO's newest development in eye protection—Chippers' and Welders' Coverglas Goggles—can be worn over practically every pair of personal glasses (even the biggest frames) and most types of safety prescription goggles *with and without side shield.*

Wider vision, too, because the lenses are larger and scientifically designed to give up to 20% more vision. Yet, with all these features the goggles weigh but a fraction of an ounce more than ordinary Coverglas goggles . . . cost only slightly more.

These goggles are the newest . . . and two of the greatest . . . developments since the advent of safety goggles. Get all the facts about these two outstanding Coverglas goggles from your AO Safety Products Representative. He can supply you.

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

If you write maker identify as IEN - 298

FREE

IF YOU PRODUCE PARTS THAT REQUIRE FINISHING OF ANY KIND

This 22-page booklet is *guaranteed* to open your eyes! It gives you the inside story of advanced barrel finishing *as never told before!*

In the last five years, barrel finishing has made rapid advances. Only those directly connected have been able to keep up. *Only 30%* of the nation's manufacturers are benefiting from the tremendous cost savings and improved finishes made possible by these advances.

Now is the time to investigate this labor-saving, cost-cutting method. ALMCO barrel finishing equipment has completely paid for itself *in as little as two months!* This is easy to understand. A single unit installation replaces from two to twelve men. Savings run as high as 95%.

"Advance Barrel Finishing" is the only mass deburring, grinding and finishing method where results are *controlled.* Amazing results are now possible on almost all types of parts from large castings to small intricate parts. Close tolerance parts can be finished with absolute uniformity to almost any desired micro-inch reading.

WRITE TODAY FOR YOUR *FREE* COPY
ASK FOR BOOKLET No. G-1

ALMCO Supersheen
AMERICA'S LARGEST MANUFACTURER OF ADVANCED BARREL FINISHING EQUIPMENT—MATERIALS AND COMPOUNDS
ALBERT LEA, MINNESOTA

If you write maker identify as IEN - 300

DRIVE . . Variable speed control for several dc. motors from ac. source

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Ask for Bulletin B-5616

Operating speed and web tension are both controlled and regulated by the company's new magnetic amplifier variable speed control. It has been designed particularly as a self-contained assembly for application on multi-motor textile slashing equipment.

Individual dc. motors drive the size box, the delivery roll and the beam on power for all three supplied by a dc. generator direct connected to an ac. motor taking power from a standard ac. line. The motor generator set and a companion booster unit are assembled, with the required controls and circuit connections, in a gasketed lint tight cabinet measuring about 42 by 25 by 76 inches. Ventilated air is cleaned by fiber glass filters at the intake. The control compartment is pressurized to prevent seepage of size dust or lint into this area.

The booster generator is used in the beam motor circuit to provide stable operation at "creep" speeds and to maintain tension control while running and during speed changes. A second booster generator is available where control of tension throughout the slasher is required, as in handling worsteds. This generator provides current for size box motor circuit.

Overall speed is set by a master rheostat. Speed of the size box and beam motors can be separately adjusted by rheostats in their field circuits. The delivery roll motor is used as master "reference" and the other motors are connected to speed up and slow down in relation to it. Excitation for the dc. generator and for the dc. drive motors is supplied by a static selenium type rectifier.

A magnetic amplifier regulates the beam motor to provide constant winding tension. It consists of selenium rectifier stacks and wire wound reactors. It is free from moving parts and requires no maintenance.

If you write maker identify as IEN - 301

FASTENING . . Miniature locknut with nylon insert, sizes No. 0 to No. 4

Source: ELASTIC STOP NUT CORP.
2328 Vauxhall Road, Union, N. J.

ESNA Type 1660

Smallest size in the new miniature units which the company has added to its Stop Nut line measures 0.109 in. across the flats. The new units are available in brass and aluminum. Each employs a Nylon locking ring insert into which the screw threads indent. The Nylon grips the threads to prevent the nut from loosening and backing off.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 302

FREE 236-PAGE
ALLIED 1953 ELECTRONIC SUPPLY CATALOG

WORLD'S LARGEST STOCKS OF ELECTRONIC SUPPLIES FOR INDUSTRY

Complete Expert Industrial Service

Send today for ALLIED's *complete* Electronic Supply Catalog. Simplify and speed your procurement—send *all* your orders to ALLIED—the reliable, one-supply-source for *all* your electronic needs. Depend on ALLIED for quick shipment from the world's largest stocks of special-purpose electron tubes, test instruments, audio equipment, electronic parts (transformers, capacitors, controls, etc.)—everything for industrial and communications application, for research, development, maintenance and production. Our expert Industrial supply service saves you time, effort and money. Send today for your FREE copy of the 1953 ALLIED Catalog—the only *complete,* up-to-date guide to Everything in Electronics for Industrial and Broadcast use.

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ALLIED RADIO
833 W. Jackson Blvd., Dept. 14-A-3
Chicago 7, Illinois

If you write maker identify as IEN - 303

be fresh stay fresh

wear
COVER'S FOG-PROOF GOGGLES

FAMOUS
"Nod & Shake" Type

Used by thousands, for years, to protect eyes against paint spray, gases, dusts, fumes, smoke. Can be worn with any make respirator. Frames are of soft, pliable rubber that give air-tight fit on any shape face. A few drops of water placed in patented groove keeps fog from forming on inside of single lenses. An easy nod and shake of the head keeps lenses clear indefinitely.

Sample sent
$ 2.00 pp

H. S. COVER, South Bend, Ind.

If you write maker identify as IEN - 304

Cut Welding Time 40%!

Get fewer rejects!
No burn-throughs!
100% penetration!
X-ray quality!

Use a P&H AC Welder
—the only welder with Instantaneous Control

Ideal for use with inert gas. Lets you handle "hard-to-weld" metals with ease — aluminum, magnesium, brass, copper, stainless, high carbon, high alloy, and low carbon steels.

A touch of your toe instantly gives you the exact heat you need — there's no time lag! And there's no burn-back to oxidize the metal before you get started.

Only the P&H Inert Gas Welder saves production time these five ways: (1) Foot switch automatically starts power, high frequency, gas, water. (2) Arc starts instantly without touching work. (3) Foot control instantly provides exact heat needed *while* welding. (4) Foot switch cuts power and high frequency immediately or gradually at completion of weld. (5) Automatic time delay shuts off gas and water.

There are more outstanding P&H AC Welder features. Ask your P&H representative to tell you about them — or write us for further information. 2427A

P&H WELDING DIVISION
HARNISCHFEGER CORPORATION
4520 W. National Avenue
Milwaukee 46, Wis.

POWER SHOVELS • CRAWLER AND TRUCK CRANES • OVERHEAD CRANES • HOISTS • ARC WELDERS AND ELECTRODES • SOIL STABILIZERS • DIESEL ENGINES • PRE-FABRICATED HOMES

If you write maker identify as IEN - 305

SAFER HANDLING

OF PETROLEUM AND SCORES OF OTHER LIQUIDS!

For safer handling of liquids in plant or field, look to TOKHEIM PUMPS. This new double-action hand pump stops dangerous dripping and slippery floors. Reduces fire hazard and accidents common to other methods of transfer. Saves on drum storage space. Speeds production, reduces costs. Handles scores of liquids efficiently (see list below). Choice of hose and spout models—for drums, skid tanks and underground installations.

Write for literature

QUALITY TOKHEIM DOUBLE-ACTION HAND PUMPS

DO YOU NEED A PUMP FOR THESE LIQUIDS?

A Tokheim Will Handle Them All and Others. Tell Us Your Problem!

Petroleum Products • Acetates • Alcohols • Aromatic Solvents • Chlorinated Solvents • Glycols • Ketones, Ethers • Petroleum Solvents • Plasticizers

General Products Division
TOKHEIM OIL TANK AND PUMP COMPANY
1654 Wabash Avenue, Fort Wayne 1, Indiana
Factory Branch: 1309 Howard Street, San Francisco 3, California

If you write maker identify as IEN-306

Speed-up DRILL PRESS OPERATIONS

WITH THE HEINRICH *Grip-Master* SCREWLESS DRILL PRESS VISE

Ask your dealer for demonstration or write for details.

NATIONAL MACHINE TOOL CO.
DEPT. 173-A
RACINE, WISCONSIN

If you write maker identify as IEN-307

Machine "down-time" cut 40%

with **HYPRESSURE *Jenny* STEAM CLEANER**

Your machines are back in production almost twice as fast, if they are Hypressure JENNY steam cleaned before repairs! Actual time studies show that up to 40% of the costly time of skilled mechanics is lost fighting grease and dirt.

Hypressure JENNY not only saves precious time, but pays plus dividends in stepped-up production, fewer lost-time accidents, lower fire-insurance premiums, and increased personnel efficiency.

Write for complete information about this modern aid to increased production. There's no obligation; so why not do it now?

There is a Hypressure Jenny Steam Cleaner for every Mill... Mine... Factory... Farm and Automotive need

Distributors in all parts of the world — For local representative see classified Telephone Directory

HYPRESSURE JENNY DIVISION
HOMESTEAD VALVE MANUFACTURING CO.
Serving since 1890
P. O. BOX 85 CORAOPOLIS, PA.

If you write maker identify as IEN-308

BETTER SEEING TOOLS FOR INDUSTRY

FOSTORIA **LOCALITES** INCREASE WORKERS' EFFICIENCY

Light the Vital Seeing Zone on Machine Tools, Inspection and Assembly Benches

MODEL 3267-H-174

$6.12 EACH in pkg. of 6
Single Units $7.65 ea.

Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.

- **Rugged Construction** withstands vibration and rough handling
- **Instantly Adjustable** with flexible ball and socket joints
- **Baked Enamel Finish** — Exterior, Smooth Gray — Reflector Interior high temperature White
- **Reflector** accommodates 100 watt or any A-19 or A-21 medium screw base lamp
- **Wired Complete** with switch socket and 8 ft. oil resistant cord and moulded plug

WRITE FOR COMPLETE CATALOG of Localite models with various type reflectors, arms and bases for every industrial use.

LOCALITE fostoria for Light ON the Job

THE FOSTORIA PRESSED STEEL CORPORATION
FOSTORIA, OHIO

Localites are available through electrical wholesalers everywhere.

If you write maker identify as IEN-309

PUMP . . Motor driven centrifugal with weight control for sump duty

Source: F. E. MYERS & BROTHER CO.
87 Orange St., Dept. 29, Ashland, Ohio

No lubrication

Bronze construction with a hydraulically balanced impeller and a stainless steel shaft characterize this new motor driven sump pump. It is available with discharge capacity to 51 gpm. and is intended to drain pits, boiler rooms, sub-basements, elevator shafts.

Drive is by a ½-hp. continuous duty induction motor with built-in overload protection. Operation is controlled by two plastic weights connected through a Monel Metal flexible cable to the motor switch. The weights can be set to desired "on" and "off" levels on the cable. A ball shaped base and strainer protect the pump against clogging. The strainer can be cleaned without lifting the assembly from the sump.

If you write maker identify as IEN-310

CONVEYING . . Plastic coated belt for use where cleanliness is required

Source: MAIN BELTING CO.
1239-43 Carpenter St., Room 260, Philadelphia 47, Pa.

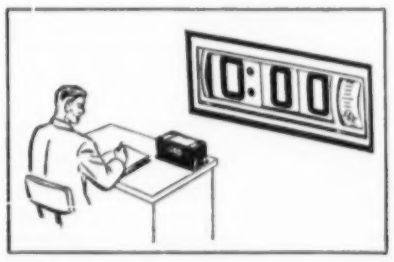
Serviceable to 160 deg. F.

A duck belt, with a polyvinyl plastic coating, has been developed by the company for material handling service where cleanliness is an essential requirement as in food plants and certain types of plastic product manufacture. The belt presents a clean white appearance and a surface that is particularly resistant to collection of dust or to abrasive action. Basing on 32-oz. guaranteed duck the belt rates 32.5 lb. per in. per ply in working tension. When 39-oz. duck is employed this increases to 46.3 pounds.

If you write maker identify as IEN-311

TIMING . . Interval unit, wheels read hours, minutes, seconds

Source: PENNWOOD NUMECHRON CO.
7247-51 Frankstown Ave., Pittsburgh 8, Pa.



About $13

Numeral wheels are motor driven in this new Model-TC Time Calculator from 0 to a total of 12 hr. in elapsed seconds, minutes and hours. The motor operates on 110-volt 60-cycle ac. The housing measures about 8 by 4 by 4 inches. It is supplied with a 6 ft. cord and plug. The second wheel can be reset to 0 by operating a start and stop switch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-312

HvH *Adjustable Limit* SNAP GAGES *for Production & Inspection*

- Mechanite Frames
- Strong, Rigid, Non-warping
- In accordance with American Gage Design Standards
- Model for every need
- Model A—0 to 6" Model C—0 to 5 11/16"
- Also special checking anvils made to your specifications

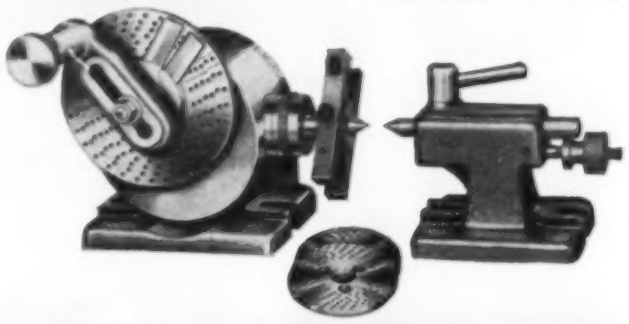
HvH SNAP GAGES eliminate guesswork in checking. No skill required. Just set the snap gages and be assured of accuracy in manufacture and inspector's checking.

Write for Complete Information

HvH TOOL & INSTRUMENT CO.
150 Lafayette St., New York 13, N. Y.

If you write maker identify as IEN-313

You Can't Beat It for Accuracy — Ruggedness — Quality



L-W Model SD 6½" Swing • 36 LB. **DIVIDING HEAD**

Ideal for smaller Milling Machines. Spindle Threaded 1½"-8 to fit L-W 5" Universal Chuck. Only **$119.30**

Heavy duty headstock and tailstock designed for maximum rigidity. Alloy steel threaded headstock spindle with extra large tapered bearing and takeup adjustment collar. Head tilts to 90° in vertical position. Alloy stress-proof steel worm and accurately cut worm wheel cut to close limits for accuracy. Ball bearing thrust and adjustable for end play. Complete with three index plates for dividing all numbers to 50 and even numbers to 100, except 96T. Index chart shows all divisions obtainable to 380. Right or left hand models.

Model BP 11" Swing for plain milling machines. Shpg. wgt., 140 lbs. **$199.54**

Model AU 11" Swing. Fully Universal for complete indexing and spiral cutting. Shpg. wgt., 190 lbs. **$296.06**

OUTSTANDING VALUES BY LARGEST BUILDERS OF DIVIDING HEADS

Order from Your Industrial Supply Distributor or Order Direct, Giving Name of Distributor

Send for complete catalog giving prices and specifications on these quality, low-cost L-W Products

L-W CHUCK COMPANY 41 SO. ST. CLAIR ST. TOLEDO 4, OHIO

If you write maker identify as IEN-314

IF YOU HAVE

OR PROBLEMS...

CALL YOUR FORT WORTH V-DRIVE DISTRIBUTOR

HE EITHER HAS IT IN.... OR CAN CONTACT THE NEAREST FORT WORTH WAREHOUSE

THIS MEANS *Quick*

DELIVERY FOR

"QD" and Bolt Rim SHEAVES

FORT WORTH MULTI V-BELTS

MULTI-CORD V-BELTS
STEEL-CABLE V-BELTS
SUPER CORD V-BELTS

Ask about Fort Worth interchangeable hub sprockets—they use V-belt sheave hubs—for immediate delivery without reboring.

WRITE FOR INFORMATION

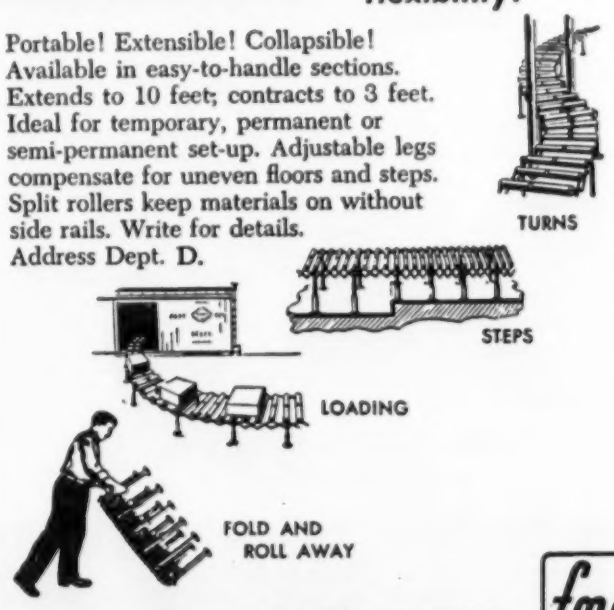
FORT WORTH STEEL & MACHINERY CO.

Dept. 21, 3600 McCart Fort Worth, Texas

If you write maker identify as IEN-315

fmc GRAVITY ACCORDION CONVEYORS.. *are tops in flexibility!*

Portable! Extensible! Collapsible! Available in easy-to-handle sections. Extends to 10 feet; contracts to 3 feet. Ideal for temporary, permanent or semi-permanent set-up. Adjustable legs compensate for uneven floors and steps. Split rollers keep materials on without side rails. Write for details. Address Dept. D.



FOOD MACHINERY AND CHEMICAL CORPORATION
PACKING EQUIPMENT DIVISION
Riverside, California • McAllen, Texas

NM-5

fmc

If you write maker identify as IEN-316

THIS PLANT

Provides **TOOLING**

and builds **SPECIAL MACHINES**

Thirty-four years of special machine and tool building has trained SEMCO tool-makers, engineers and skilled workmen—well able to most efficiently design, develop and build your new machinery and production equipment.

Write for a copy of our *Free Pamphlet — "Men, Machines and Equipment."* It gives a practical answer to your tooling, special machine development and experimental problems.

SEMCO

SERVICE MACHINE COMPANY
INCORPORATED

200 MILLER STREET ELIZABETH, N. J.

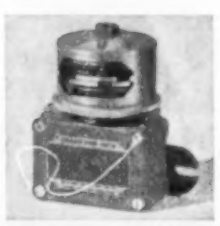
If you write maker identify as IEN-317

MELETRON

UL APPROVED

PRESSURE SWITCHES

15 to 10,000 PSI • .05 to 80 PSI • VACUUM



Wherever a Vacuum or Pressure change must initiate electrical action there is a Meletron or Barksdale Pressure Switch to perform that function.

They protect costly equipment
They provide priceless safety
They assure process control

They operate in any position
They are not affected by vibration
They have extreme repetitive accuracy

Write for Bulletin 2M-S

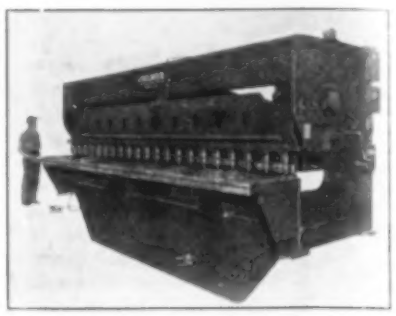
BARKSDALE VALVES

1566 E. SLAUSON AVE., LOS ANGELES 11, CALIF.

If you write maker identify as IEN-319

SHEARING . . Pivoted blade machine rates 20 ft. of 3/16 in. steel plate

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Wickliffe, Ohio



55 strokes per minute

Series 3C20 is a new size in the company's Steelweld line of shearing machines in which the upper blade rides upon a pivoted center in a design that eliminates the usual slide ways. The blade assembly includes an adjustment for quick change in cutting clearance for given thicknesses of work. Control for this adjustment centers at a hand crank and dial indicator reading in thousandths.

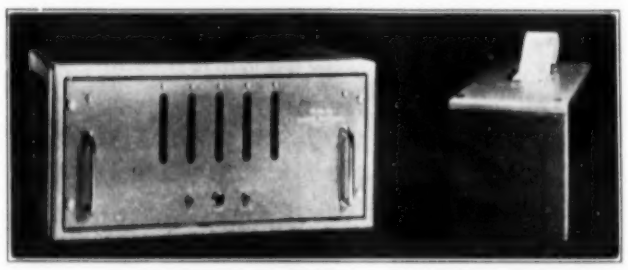
Control centers at two electric foot switches that can be moved about the floor to most convenient working position. Either switch can be locked out of the circuit or both can be arranged for interlocked operation if two men are working the shear. A chain driven rotary limit switch stops the blade at the top of its stroke.

Construction includes a new design of clutch brake mechanism, air operated action for quick clutch engagement or braking, motor driven back gage with control buttons located at the center front in connection with a position indicator visible through an oblong slot in the hold down beam. The machine is built with a steel plate frame in welded assembly.

If you write maker identify as IEN-320

COUNTING . . Electronic equipment actuates tape recorder to print totals

Source: BERKELEY SCIENTIFIC DIVISION
2202 Wright Ave., Richmond, Calif.



Prints totals on adding machine tape

Series 1550 is a new electronic digital recorder consisting of an electronic readout unit and a tape printing recorder. In the readout is an assembly of 3, 4, 5 or 6 decade counters and a selecting relay assembly to actuate the counting circuit of the printing recorder. The recorder prints a sequence of total counts on a standard adding machine tape at a maximum cycling rate of one each 0.8 second.

The counting period is determined by the characteristics of the basic counting instrument. Most standard Berkeley counters, now in use, can be adapted for operation with the recorder. Power input is 110-volt 60-cycle ac. The readout measures about 21 by 10½ by 15 in. over its cabinet. It is available in a 19 by 8¾ in. panel for rack mounting. The recorder measures 7½ by 8¼ by 14½ in. overall.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-321

1 AMP TOOL FOR ALL TYPES OF WIRE

CRIMPS AMP SOLDERLESS TERMINALS AND CONNECTORS ON ALL KINDS OF WIRE FROM #22 TO #10

This handy tool will crimp 3 sizes of AMP SOLISTRAND* terminals on solid, stranded, irregular shaped conductors, or combinations of them. AMP "CERTI-CRIMP*" ratchet holds terminal while wire is being inserted and WILL NOT RELEASE TOOL JAWS UNTIL YOU HAVE MADE A PRECISION CRIMP. AMP crimping dies are plug gauged to ±.003" tolerance in release position!

AMP

*Trade-Mark
AMP Trade-Mark Reg. U. S. Pat. Office

AIRCRAFT-MARINE PRODUCTS, INC.
2100 Paxton Street, Harrisburg, Pa.

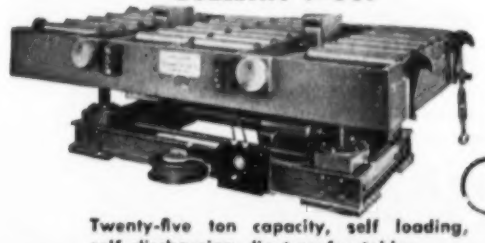
If you write maker identify as IEN-322

Power positioning of material increases production in sheet feeding operation.

perhaps
YOUR PRODUCTION CAN BE INCREASED THROUGH POWER POSITIONING OF TOOLS AND MATERIALS

PORTELVATOR®
has supplied the answer to others.

Start a beneficent chain reaction now; write for
BULLETIN P-507

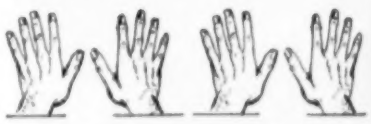


Twenty-five ton capacity, self loading, self discharging die transfer table.

THE *Hamilton* TOOL COMPANY
905 HANOVER STREET • HAMILTON • OHIO • U • S • A

If you write maker identify as IEN-323

One DUO washes 4 hands



Maximum in Cleanliness

- *No faucets* to touch or maintain
- No possible transmission of germs
- Clean running water from sprayhead
- No water waste, — foot pedal controls water flow—no chance of leaving water running unnecessarily
- Temperature control valve to regulate water

Like the nationally used larger Bradley Washfountains, the DUO has gained wide acceptance for—

- public buildings
- factories and mills
- plant cafeterias and laboratories
- schools
- institutions

BRADLEY WASHFOUNTAIN CO.
2319 W. Michigan St., Milwaukee 1, Wis.

FOOT-CONTROL

WRITE FOR BULLETIN K-711.

BRADLEY Duo washfountains

Distributed through Plumbing Wholesalers

If you write maker identify as IEN-324

Etch Iron, Steel or Their Alloys

IDEAL *Electric* ETCHERS

Burn a Permanent Mark for
Model Nos.
Hardness Tests
Inventory Data
Gauge of Metal Identifying Tools, Jigs, Dies
Parts Nos.
Sizes
Dozens of Uses

TRY IT OUT!

More reliable than tags, far cheaper than special plates. Portable—safe—fast! Repays low cost dozens of times over in time and money saved. "Universal" Model (shown) has 4 etch heats —120 to 700 watts. Other sizes for all sizes of work.

SOLD THROUGH LEADING DISTRIBUTORS

IDEAL INDUSTRIES, Inc.
1108 Park Ave., Sycamore, Illinois
IDEAL

Please send catalog data and arrange free demonstration on IDEAL etcher.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____

If you write maker identify as IEN - 325

Surface PYROMETERS for every purpose

The routine use of CAMBRIDGE Surface Pyrometers takes the guesswork out of temperature determination in many industries. The CAMBRIDGE is accurate, dependable, rugged, quick-acting and easy to use. The Roll Model is for checking surface temperatures of still or moving rolls. The Needle Model is for insertion into materials in a plastic or semi-plastic state for within-the-mass temperature determination. The Mold Model is for checking surface temperatures of mold cavities and surfaces of almost any contour.

Send for Bulletin 194SA.

CAMBRIDGE INSTRUMENT CO., INC.
3710 Grand Central Terminal
New York 17, N. Y.

CAMBRIDGE
PIONEER MANUFACTURERS OF
PRECISION INSTRUMENTS

Moisture Indicators and Recorders • Physical Testing Instruments
Surface Pyrometers • Laboratory Instruments for A. C. & D. C. • Galvanometers
Engineering Instruments • Gas Analysis Equipment • Physiological Instruments
and many other Mechanical and Electrical Instruments

If you write maker identify as IEN - 326

AMERICA'S FINEST INDUSTRIAL PACKAGING LABORATORY...

...can also provide a more efficient shipping container for YOUR product

SEND FOR FREE BOOKLET

General BOX COMPANY

GENERAL OFFICES: 1815 MINER STREET
DES PLAINES, ILLINOIS

DISTRICT OFFICES AND FACTORIES: Cincinnati, Denville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. General Box Company of Mississippi, Meridian, Miss. Continental Box Company, Inc., Houston, Dallas

If you write maker identify as IEN - 327

BE CERTAIN

GET BRONCO Certified

the portable cords and cables with 60% by weight Neoprene jackets.

BRANDED!

BRANDED JACKETS! No mistake...You know you are getting *Certified*. You read at a glance cable type, size, voltage, "P116BM"... which indicates approval by the Pennsylvania Bureau of Mines, and acceptance for listing by the U. S. Bureau of Mines. Easy to measure . . . "Bronco" is repeated every 2 feet.

With Bronco 60 *Certified* you know you are getting a full 60% by *weight* of Neoprene in your cable's protecting jacket because its contents are *certified*.

More *Neoprene* makes long-lasting Bronco 60 *Certified* more *resistant* to oil, acids, alkalis, ozone, gasoline, salt water.

In addition, with Bronco 60 *Certified* you get: 1. Cold Rubber Insulation. 2. Branded Jackets. 3. Superior Flexibility.

So, BE CERTAIN, GET *CERTIFIED* — the greatest cord value on the market!

SOLD NATIONALLY BY ELECTRICAL WHOLESALE DISTRIBUTORS

WESTERN INSULATED WIRE CO.
Los Angeles 58, California

If you write maker identify as IEN - 328

GRINDING . . Stone holder to resurface commutators, slip rings

Source: MARTINDALE ELECTRIC CO.
1353 Hird Ave., Cleveland 7, Ohio

Weighs about 4 pounds

Type-C Commstone is a new holder to manipulate the company's commutator and slip ring dressing stones when surface clean-up is required. The unit takes a stone holder or a 2-in. box in interchangeable arrangement for work surface from 1 to 4¾ in. in width in three available sizes. It mounts on a support hinged at the center with insulating bushings for brush-arms measuring ⅜ to 1 in. in diameter. It can be applied on the arm or can be taken apart at the center and mounted directly on the lower part of the support.

If you write maker identify as IEN - 329

CLEANING . . Granular material spreads on floor, absorbs oil, grease

Source: DIVERSEY CORP.
1818-22 Roscoe St., Chicago 13, Ill.

For use on any floor

Pickup is a new granular material to be spread on wet oily floors. It absorbs somewhat more than its dry weight in water or oil without becoming slippery. It is swept up and removed when it has been saturated. The material is non-abrasive and will not harm a floor or a worker's shoes. It will not gum or clog when saturated.

If you write maker identify as IEN - 330

STORING . . Tube assembly fitted to safe for prints, tracings

Source: SCOTT-RICE CO.
608-12 S. Main St., Tulsa 3, Okla.

Built to order

Metal tubes, to 60 in. in length, are available in an assembly to fit a specified space on a patented rocker base that permits tilting forward as shown in the illustration. The tubes provide space to keep prints and tracings in secure storage. The assembly also is available in a built-to-order wood cabinet if the additional protection of the safe is not required.

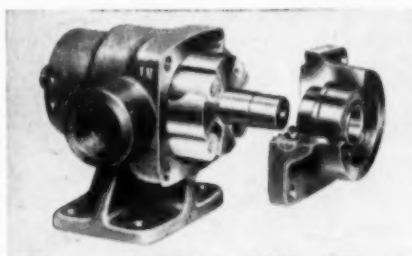
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 331

A PAID NEWS ADVERTISEMENT BY HYPRO ENGINEERING, INC.

PUMP . . Industrial-type has new specialized design

Hypro's 4000 Series Gives Maximum Life and Wide Adaptability



A new, industrial-type pump, combining greater utility and wearing life with increased pressures and wide adaptability, has been developed by Hypro Engineering, Inc., Minneapolis, Minn. The new Hypro 4000 Roller Pump is especially adaptable to the handling of powder suspension materials in water and other non-lubricating liquids.

Higher capacities and pressures up to 150 lbs. can be obtained with the new Hypro rotor design. The 4000 Pump employs permanently sealed-in-grease ball bearings and suction "bleed-back" port to relieve pressure on seals. Scooped slots greatly increase the pump's capacity by utilizing space behind the rollers as well as between each roller. Lateral rotor movement, a common cause of wear in rotary pumps, is reduced to a minimum because of pressed fit of the stainless steel shaft into the inner race of ball bearings. The result is a "free-floating" rotor with no metal-to-metal wear inside the pump case.

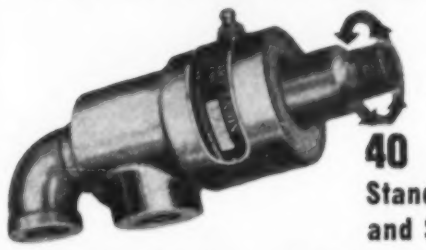
Designed primarily for industrial, farm, chemical and marine use, the Hypro 4000 Roller Pump is available in cast iron or Ni-Resist. The user has a choice of Nylon or rubber rollers.

For further information including prices, write Dept. KP-7, **Hypro Engineering, Inc.,** 407 No. Washington Ave., Minneapolis 1, Minnesota.

If you write maker identify as IEN - 332

ROTARY UNIONS

(Trade Name)



Type "S" Rotary Union

40 Standard Types and Sizes

These cover all ordinary applications for heating or cooling revolving shafts and drums . . such as Steam up to 150 PSI, Hot Oil to 500° F, Coolants, Air, Gases, Water, Brine, Vacuum, and Alternate Mixtures at speeds up to 1000 RPM. Special models for higher speeds, pressures, and Dowtherm. Available in pipe sizes from ¼" to 5".

Direct factory engineers are available at all offices to discuss your sealing problems. Please contact them or write Dept. 1E for our catalog.

"Where *Good Connections* Count"

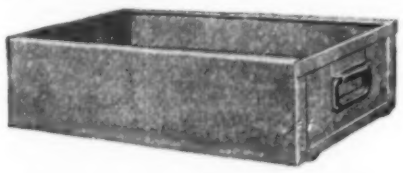
PERFECTING SERVICE COMPANY
332 Atando Avenue (Home Office and Factory) Charlotte, N.C.
Atlanta · Chicago · Cleveland · Philadelphia · Providence · New York · Montreal · Toronto

If you write maker identify as IEN - 333

IMMEDIATE SHIPMENT

STYLE 300 STACKING BOX

ALL PRICES F.O.B. FACTORY, PHILA.



COMPLETE CATALOG ON REQUEST

Just right for small parts. Light in weight. Easy to handle. Equipped with drop handle each end. Runners save wear on bottom of box and act as positive stacking lock. Will stack with style 700 stacking bin of the same length and width.

Product Number	Width	Length	Height	Gauge Steel	Price Plain	Price Green
301-20	6"	9"	3½"	20	$ .85	$ .98
302-20	8"	12"	4"	20	$ .96	01.09
303-19	9"	13½"	4½"	19	$1.20	$1.38

PHONE • WIRE • WRITE
BAldwin 9-1805

BAY PRODUCTS, INC.
3011 N. 16THE ST. • PHILADELPHIA 32, PA.

If you write maker identify as IEN - 334

ACCURACY is built into these sturdy **MANOMETERS**

FOR QUICK, EASY READING

A Trimount Manometer
for every purpose—a mounting for every installation

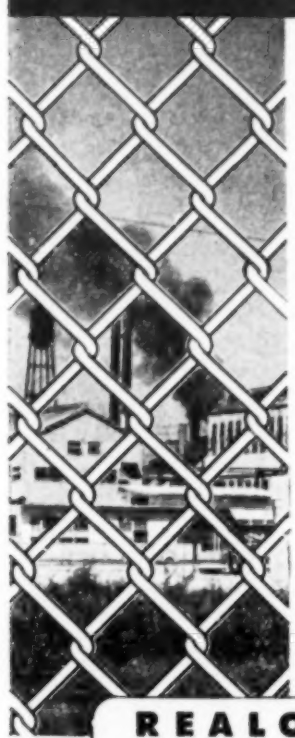
- Well Type
  Single and Multiple Tube
- U tube
- Absolute Pressure
- Micro Manometers
- Inclined Manometers
- Draft Gauges
- Indicating Flow Meters
- Liquid Level Gauges
- Electronic Level Control

Write for New Illustrated Bulletin H

Trimount INSTRUMENT CO.
3119 WEST LAKE STREET
CHICAGO 12, ILLINOIS

If you write maker identify as **IEN - 335**

REALOCK FENCE



GIVES *Positive* PROTECTION

Positive protection for your grounds and property is assured with Realock Fence. In addition, all fittings, hinges and locking devices have bolts on the inside, secure from outside tampering.

Noted for its rugged construction and long-lasting weather resistance, Realock Fence can be depended upon for years of dependable, trouble-free service.

For additional information write our nearest sales office or consult your classified telephone directory.

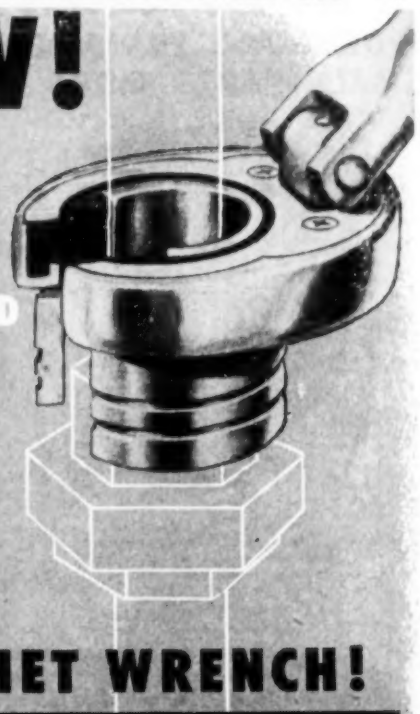
THE COLORADO FUEL & IRON CORPORATION
Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION
Oakland, California
WICKWIRE SPENCER STEEL DIVISION
Buffalo, New York

REALOCK FENCE
THE COLORADO FUEL & IRON CORPORATION
CF&I
BRANCHES IN ALL KEY CITIES

If you write maker identify as **IEN - 336**

NEW!

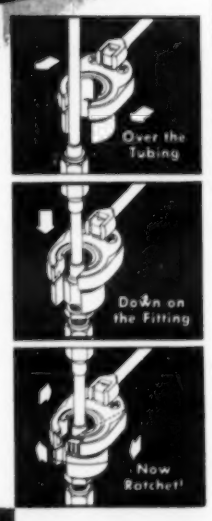
THE WORLD'S MOST ADVANCED TOOL



TAC

OPEN END RATCHET WRENCH!

"BORROW" ONE... we lend it FREE!



Prove the incredible saving yourself on tubing pipe, conduit, cable, on long studs; nothing like it!

Never have you been offered such a sure way to prove a *hand tool principle. BORROW* A TAC OPEN END RATCHET WRENCH; handle, head and socket. We ship to rated companies on memo billing—returnable for full credit.

This is the widely discussed Open End Ratchet Wrench that you've heard would actually cut wrenching time to a mere fraction. But seeing is believing... trying is proving. TAC is ready to let you sell yourself on the only existing tool that combines...

...the reaching capacity of the *open end;*
...the speed of the *ratchet;*
...the versatility of the *socket.*

ACT NOW!

WRITE ON COMPANY LETTERHEAD OR P.O. TO BORROW OPEN END RATCHET WRENCH. Sent on memo billing to rated companies (returnable for credit).

FOR PHENOMENAL WRENCHING SPEED...
- AUTOMOTIVE
- HOME APPLIANCES
- REFRIGERATION
- PLUMBING
- NUTS WITH LONG STUDS
- FUEL LINES
- WATER AND GAS
- MARINE
- DIESEL
- AIRCRAFT
- INSTRUMENTS

...AND MANY OTHERS

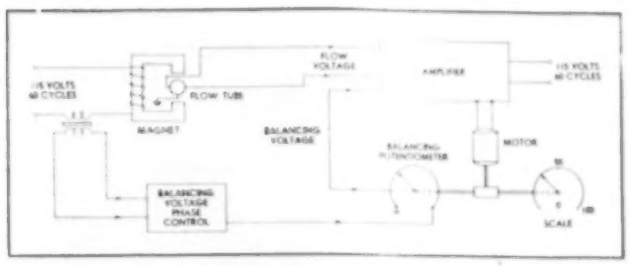
SEND FOR OUR NEW CATALOG

TAC **TUBING APPLIANCE COMPANY**
10321 Anza Avenue, Los Angeles, California

If you write maker identify as **IEN - 338**

METER . . Reads rate of flow in a conductive liquid, also controls

Source: VITRO CORP.
11th Floor Woolworth Bldg., New York 7, N. Y.



Details in Flowtron Bulletin

Flowtron trades names a new precision instrument to measure volumetric flow of conductive liquids by electro-magnetic induction. It is available in a number of sizes with full scale flow range from 50 cc. to 20 gpm. Higher ranges can be specified. Accuracy is within 0.5 ccm. at flow as low as 50 ccm. on full scale. Applications are primarily in laboratory semi-works, industrial pilot plants and in plants dealing with pharmaceuticals and chemical specialties. Slurries as well as opaque and clear liquids can be metered.

The instrument is made up of two parts consisting of the flow detector and the recorder or recorder controller. Connection between the two is electrical so the recording portion can be located at some distance from the detector. The flow sensing element is a short length of soft glass or non-metallic insulated metal tube having a pair of metallic electrodes which extend through the walls of the tube from opposite sides. The tube is mounted in the gap of an electro-magnet and is located so its axis and the line joining the electrodes and the direction of the magnetic field are all perpendicular to each other.

Liquid passing through the tube induces a voltage that is proportional to the linear velocity of the flow stream and this induced voltage is indicated or recorded on a linear scale after it has been amplified for application in the recorder's servo circuit. The magnetic field is provided by connection to a 110-volt 60-cycle ac. line. Operation is independent of line voltage variation.

If you write maker identify as **IEN - 339**

PROTECTING . . Helmet liner designed to fit over head, neck, ears

Source: INDUSTRIAL PRODUCTS CO.
2801 N. Fourth St., Philadelphia 33, Pa.

For cold weather

New liner, separate from a worker's hard helmet, is made of soft woven woolen material. It is tan color, lock-stitched at the seams and provided with a tape tie to secure under the user's chin. Three sizes range from 6⅝ to 7½.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 340**

STANDOUT IDENTIFICATION
– at the right price!

METAL NAME PLATES by

CHICAGO THRIFT-ETCHING CORPORATION

Spotlight your product with a sparkling metal name plate that reflects quality, lends distinction and assures permanent readability. Ask us to quote on name and instruction plates, dials, panels, etc. We also apply special finishes to aluminum products and parts including ANODIZING by the exclusive Alumilite process. Write today for information and quotations.

CHICAGO THRIFT-ETCHING CORPORATION
1555 North Sheffield Ave., Chicago 33, Illinois, Dept. F
SUBSIDIARY OF DODGE MFG. CORPORATION, MISHAWAKA, IND.

If you write maker identify as **IEN - 341**

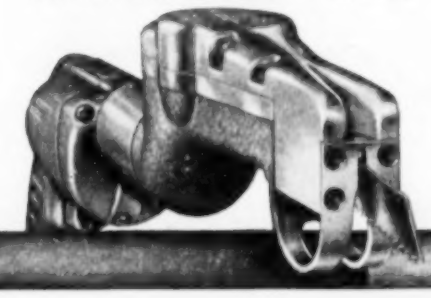
RCS SUPER SAW

SAVES YOU MORE TIME, RIGHT ON THE JOB, THAN ANY OTHER TOOL IN YOUR KIT!

A Journeyman's tool, built to stand up under constant, on-the-job Contractor or industrial use. Needs no starting hole—has built-in blower—fits any heavy duty ¼" or ⅜" drill—blades to cut all materials—listed on Federal Supply Schedules, Class 40 Materials.

Write for literature and prices (Bulletin H-1)

R.C.S. TOOL SALES CORPORATION • JOLIET, ILLINOIS



If you write maker identify as **IEN - 342**

How to s-p-e-e-d de-burring, sanding of sheet metal

Sundstrand Air Sanders have paid their way with savings of time and cost in swift removal of burrs over rivet holes and scratches on sheet-metal products. Result—a fine, smooth surface with no swirls, no pressure marks, no fatiguing vibration. Check on the sander that's used the world over for finishing wood, metal, or plastic. See your local supplier or write for Bulletin IEN-1.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

If you write maker identify as **IEN - 343**

HEIN-WERNER HYDRAULIC JACKS

Simplify

COUNTLESS INDUSTRIAL JOBS

It's really "mind over matter" when you use hydraulic force to handle the tough jobs around the plant. For instance, this Model 30.11AA Hein-Werner Hydraulic Jack provides 60,000 lbs. of hydraulic pressure for any pushing, pulling, bending, or straightening operation. With it, one man can easily lift big loads, move heavy machinery, bend rods, press bushings, and handle hundreds of similar heavy-duty jobs. There's no need for crews or helpers . . . no confusion or wasted man hours.

The complete line includes models of 1½, 3, 5, 8, 12, 20, 30, 50 and 100-tons capacity. H-W Jacks of 12-tons capacity and larger have carrying and positioning handles. See your industrial supply distributor or write us.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORPORATION
Waukesha, Wisconsin

If you write maker identify as IEN-344

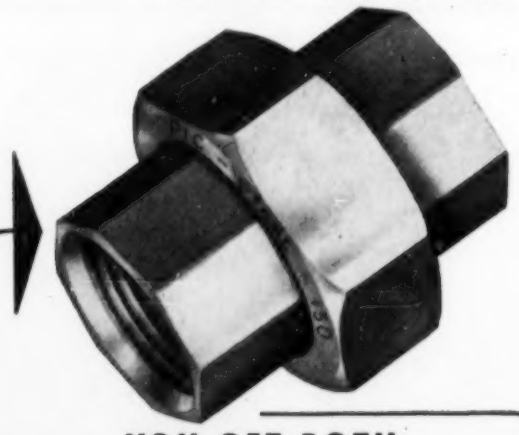
the right answer

. . . to every gauge need IN THIS NEW CATALOG

The right answer—the Marsh answer — to every pressure gauge need is described by this new Marsh catalog which covers hundreds of variations of styles, types, mountings, ranges, functions. Remember that Marsh gauges, from the "Standard" series line to the heavy-duty "Mastergauge" series have proved across the years to be the most economical you can buy for a given set of conditions. Let us prove this in terms of gauges for your product.

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept.: 155 E. 44th St., New York 17, N. Y.

If you write maker identify as IEN-345



YOU GET BOTH

GUTS and GLAMOUR WITH PIC STEEL UNIONS*

Original Equipment Favorites, Pics are good looking, strong, 100% zinc plated. They look well to the eyes, wear well on the installation! Ends are of heavy steel pipe coupling stock — uniformly flat sided. Installation is speedy with open end wrenches. Special wedge type bronze seat for tight, safe closure. Even threads are zinc plated for maximum rust protection. The payoff's the price — less than a galvanized — no more than a black malleable union!

***For 150 lb. service—write for FREE SAMPLES**

DART UNION COMPANY
130 THURBERS AVENUE, PROVIDENCE 5, R. I.

If you write maker identify as IEN-346

Plastic Seal BETTER PACKAGING *at* LOWER COST!

Protects parts
FROM RUST AND DAMAGE
while handling or shipping!

Plastic Seal forms a skin tight coating that is moisture-proof and air-tight. Strongly resists shock and abrasion. Ideal for bulk shipments — requires less wrapping — reduces cost. Although Plastic Seal is tough it can be easily peeled. Transparency allows instant inspection and identification. Also available in colors for coding.

Write today for price information and free engineering service on production dipping problems.

GLOBE *Imperial Corporation*
2023 Kishwaukee St., Rockford, Illinois

If you write maker identify as IEN-347

HANDLING . . Hinged bracket protects work bound by chain or cable

Source: CANTON MFG. CO.
2406-10-13th St., N. E., Canton 5, Ohio

$3.50 per pair

Hinge-Guard is a new two-part metal bracket through which a chain or cable is threaded to provide a flat binding foot on a work surface or on a package corner. The chain or cable can be pulled up tightly, with the bracket in place, without cutting into the work surface. Application can be made singly on curved surfaces or in a connected pair as on the corner of a packing case. The bracket takes chain to ½ inch. Weight per pair is 3 pounds.

If you write maker identify as IEN-348

CONDUCTOR . . Magnet wire with plastic cover film to bond turns

Source: PHELPS DODGE COPPER PRODUCTS CORP.
Box 600-A, Fort Wayne, Ind.

Technical data upon request

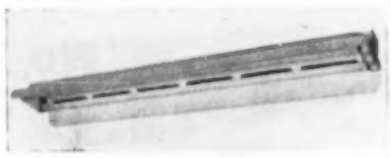
Bondeze trade names a new form of the company's Formvar insulated magnet wire in which a thermoplastic film is applied over the insulation. The wire is dry on its outer surface when it is supplied. It is wound into coils in the usual manner. Application of heat or solvent then causes the thermoplastic film to become tacky so adjacent turns will bond together. When the coil has cooled or dried it presents a hard secure structure.

The new wire minimizes forming and assembly operations. It calls for fewer steps in winding a typical television yoke coil. It makes possible unusual shapes of coils. The company has supplied large quantities of the wire for manufacture of television yoke coils. It has recently expanded its facilities and now is prepared to supply the wire for other applications.

If you write maker identify as IEN-349

LIGHTING . . Fluorescent fixture directs 23 per cent of light upward

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.



For general use

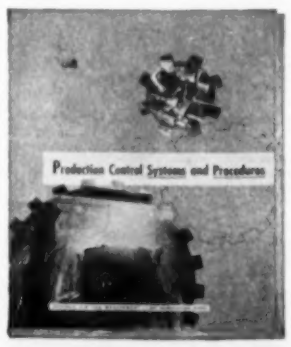
Slots in the reflector of this new Type SDP fixture provide for upward transmission of about 23 per cent of the light provided by the fixture. The new design eliminates contrast between the bright fixtures and the dark ceiling. The white hood is ribbed for structural stiffness. The porcelain enameled reflecting surface is one piece and can be removed to clean. The fixture takes two slimline lamps of 38, 58 or 75 watts each. A longitudinal shield can be added.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-350

A PAID NEWS ADVERTISEMENT BY REMINGTON RAND INC.

PRODUCTION CONTROL, 1953 —by men who have controlled production



This new booklet by Remington Rand offers you, *free*, first-hand experience in case-history form, by production men who are dealing successfully with today's complex manufacturing problems.

They find, as you have found, that to deliver the goods today sure-fire methods must be found to coordinate men, materials, machines. The simpler these methods, the better.

Whether your plant is large or small, you will want this book right at your elbow. There's not an ounce of theory in it — it's packed with down-to-earth know-how in your own language. For your free copy of X1268, write direct to the publisher, Remington Rand Inc., or use the Reader Service Form.

REMINGTON RAND INC.
Management Controls Library, Room 1630
315 FOURTH AVENUE, NEW YORK 10, N. Y.

If you write maker identify as IEN-351

TINY but MIGHTY!

SKINNER STAINLESS STEEL SOLENOID VALVES

. . . Another case of "a good thing in a small package"! Users are amazed at the ruggedness and unusually large capacity of Skinner Valves—they're tiny but mighty, with a standard range for gaseous or liquid media from 5 to 250 p.s.i., and special from 5 to 850 p.s.i. Their soft insert seat prevents leakage and positive action is assured by spring loading. Skinner Valves may be used in any position, with pipe connections furnished to suit specifications. Power consumption is 10 watts max. Special coils for high humidity or high temperature applications can be supplied. Standard models are approved by Underwriters' Laboratories. *Write for Bulletin No. 501.*

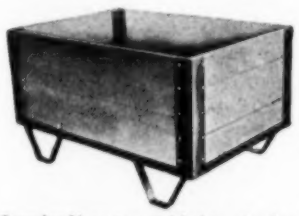
SKINNER ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
110 Edgewood Ave., New Britain, Conn.

If you write maker identify as IEN-352

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY

Standard 2-way entry bolted type skid built to handle loads up to 5 tons.



Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

If you write maker identify as IEN-353

HILD Heavy-Duty PORTABLE VACUUM

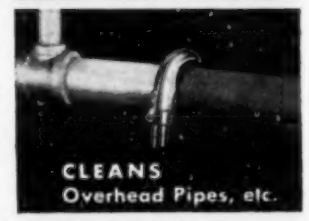
Always Ready for Wet or Dry Dirt Removal

No adjustments to make . . . no filter to change when switching to wet pick-up work. Moisture in vacuum air stream cannot damage HILD Bi-Pass Motor. Special attachments for scores of clean-up jobs. Two sizes: 10 or 40 gallon liquid capacity.

Demonstration in Booth 1344 PLANT MAINTENANCE SHOW

SWEEPS Dust and Dirt

DRIES Scrubbed Floors



CLEANS Overhead Pipes, etc.

Write for FREE CIRCULAR

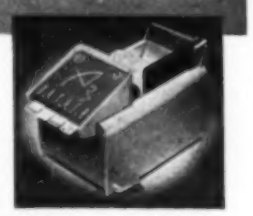
HILD FLOOR MACHINE CO.
740 W. Washington Blvd., Dept. IEN-1, Chicago 6, Ill.

If you write maker identify as IEN - 354

STICKS INSTANTLY WITHOUT MOISTENING
CUTS COSTS • • • SPEEDS LABELING

If your product requires a label...new improved Archer Contact Labels will do a better job faster, more simply and efficiently, at less cost.

Contact adhesive labels are easily "smoothed-on" with just finger-tip pressure. They stick and stay stuck on any smooth surface . . . there's no limit to their use. Contact labels are supplied mounted on carrying tape and are available in over 60 stock sizes . . . or designed to meet individual needs.



AUTOMATIC DISPENSING

WRITE TODAY FOR COMPLETE DETAILS AND SAMPLES, WITHOUT OBLIGATION

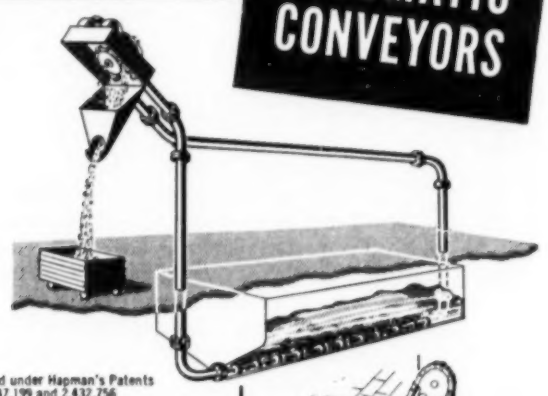
Archer LABEL COMPANY
New York
Chicago
Cincinnati
San Francisco
Paris

97 W. UNION STREET • PASADENA 1, CALIFORNIA

If you write maker identify as IEN - 355

Get automatic **LOW COST** handling of loose materials such as:
METAL WORKING CHIPS • DUST • SCALE • CRACKLINGS • POWDERS • ETC. *with*

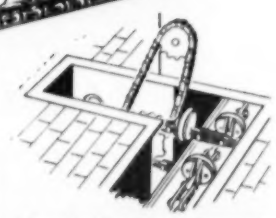
HOUDAILLE AUTOMATIC CONVEYORS



Licensed under Hapman's Patents No. 2,147,199 and 2,432,756

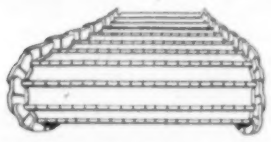
Houdaille Chain Drag Conveyors

Completely enclosed flights and chain automatically collect, transport and discharge chips, sludge, scale and other types of solid or fibrous material which settle to the bottom of tanks or hoppers. System eliminates manual handling methods, conserves manpower and requires little or no maintenance. Available in standard pipe sizes of 3", 4", 6" or 8". Larger sizes available on request. Choice of chains, flights, casings, accessories available, depending on application.



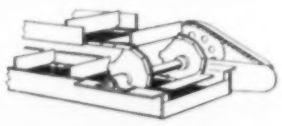
Houdaille Open Trough Chain Conveyors

Chain Drag Conveyors, installed in open troughs, offer advantages in many operations. Below-floor-level installation, illustrated, removes chips from gear cutters, keeps system from interfering with heavy traffic plant areas . . . offers access to chain and flights at any point of circuit.



Houdaille Pan Type Conveyors

One-piece, heavy-gauge steel plates, with all-welded hinges, lock together firmly with connecting rod to form perfect pan-type conveyor for chips. Welded hinges, rod connections and side wings, securely interlocked even when chain negotiates sprocket, prevent fall-through of material. Plates perforated for drainage, depending on application.



Houdaille Slat Type Trough Conveyors

Slat type trough conveyors, operating individually or in sequence, transport material to any given point—can be operated continuously or intermittently as desired. Slats and chain move material in open troughs, return automatically to collection or transfer points.

NEW Comprehensive Catalog . . .

with complete information on all Houdaille conveyors is now available. Write today on company letterhead to . . .

Honan-Crane Corp.
802 Wabash Ave., Lebanon, Ind., *a subsidiary of*
Houdaille-Hershey Corporation

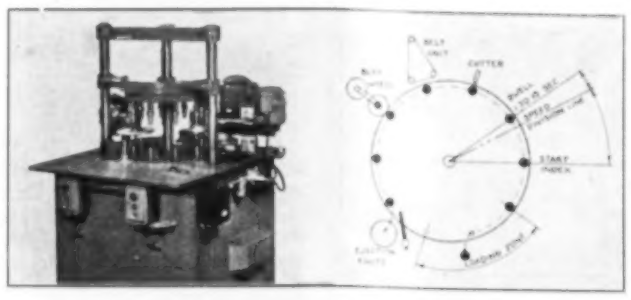
In Canada: E. W. PLAYFORD, LTD., Montreal 28
W. E. MICKLETHWAITE, Toronto 18
CUMMINGS GALBRAITH, LTD., Edmonton, Alta.
All Honan-Crane equipment is sold on a performance guaranteed basis.

See Honan-Crane Equipment in Operation!
at the PLANT MAINTENANCE SHOW
Booth 1239

If you write maker identify as IEN - 357

MACHINING . . Multi-spindle unit to finish small circular work pieces

Source: J. M. NASH CO.
2354 N. 30th St., Milwaukee 45, Wis.



Illustrated details in Bulletin 103

Flash Lathe No. 103-B is a new ten-spindle vertical automatic machine for small metal and plastic work pieces. Work capacity is to 4½ in. in diameter when all ten spindles are employed. It is maximum at 6 in. on alternate spindles. Height range is to 8 inches. The machine is designed to remove flash, trim gates, groove, abrade, polish, buff.

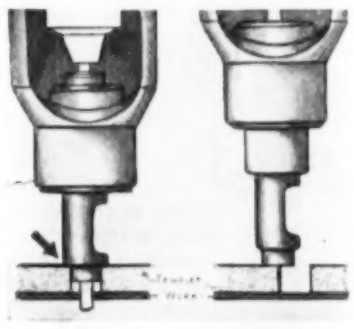
The power spindles are mounted to face upward in a revolving plate in the machine housing and a motor driven indexing mechanism advances the plate in a combination of fast approach and dwell. Work is secured in suitable holders mounted on the spindles. It is held in place by downward facing spring backed floating centers in a second circular plate mounted to move up and down as well as to rotate on cylindrical ways.

Stationary and motor driven rotating tool assemblies mount on the housing at the rear to operate as the work comes into position. The tooling occupies a 140 deg. arc. Spindle speed is between 700 and 2,000 rpm. Rapid traverse is 0 to 50 ft. per minute. Slow approach with feed and dwell is 0 to 20 ft. per minute. The company supplies the machine to order.

If you write maker identify as IEN - 358

DRILLING . . Template guide requires correct drill positioning

Source: BELL ELECTRIC CO.
1846 W. 21st St., Chicago 8, Ill.



Drill templates can be made of soft material, Masonite or plywood, as well as of aluminum or steel and can be depended upon to stand up in service when this new Sheldon Safety drill guide is employed. It applies on any standard electric or pneumatic portable tool. It takes standard length drills from No. 40 to No. 10 as well as fractional sizes from $\frac{1}{32}$ to $\frac{1}{16}$ inch.

It requires that a guide pilot be entered into the template opening before a sleeve will retract and permit the drill to come down and move through the work. When drilling pressure is released the sleeve again moves forward to drill enclosing position. The pilot can be replaced when worn.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 359

POTDEVIN
50" wide conveyor
GLUING MACHINE and COMBINING PRESS

60 years of dependable service

Handles webs or sheets. Thermostat control for hot glues. Patented dial control regulates coating of adhesive. Single adjustment for overall pressure of combining rollers.

Consult our engineers on any coating problem. Literature on request.

POTDEVIN MACHINE CO.
213 North Street
Teterboro, N. J.

Designers and manufacturers of equipment for Bag Making, Printing, Coating, Laminating, Gluing and Labeling.

If you write maker identify as IEN - 360

Order Drill Jig Bushings from EX-CELL-O's Huge Stock

EX-CELL-O maintains a stock of over a quarter-million drill jig bushings in Detroit and also ample supplies in New York, Los Angeles, and Toronto. Orders for standard sizes can be filled immediately. Write today for your free copy of Ex-Cell-O Bushing Catalog No. 35371.

XLO 51-9

EX-CELL-O CORPORATION
DETROIT 32 • MICHIGAN

If you write maker identify as IEN - 361

Precision 16" Drilling Machine

saves valuable times in tool-room and model shop by reducing set-up time and supplying correct speeds.

WIDE RANGE INSTANT SPEED SELECTION OF 150 TO 4000 R. P. M.

for drilling, reaming, spot-facing, counter-boring and tapping. Variable speed spindle with built-in back gears, driven by ½ HP single or three phase built-in motor. Completely enclosed drill head design; *no belt changing required.*

FEATURES . . . Convenient direct reading infinitely variable speed spindle control dial, together with a drill size, speed and material chart; Quick-set vernier depth control; Sealed-for-life ball bearings thruout; Heavy construction plus precision machining for accurate and dependable performance; Counter-balanced head on bench model; Tilting table and ground base on floor model.

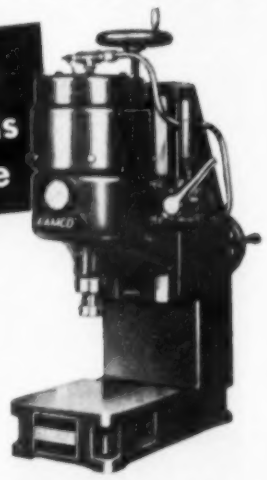
Bench Model 601 variable speed counter-balanced head. Supplied with No. 2 Morse taper or Jacobs No. 2A taper.

Free Data **on this advanced design precision drilling machine is available upon request.**

THE ELECTRO-MECHANO CO.
269 E. ERIE STREET MILWAUKEE 2, WISCONSIN

If you write maker identify as IEN - 362

famco Offers 28 Air Press Models for Production Use



FEATURES INCLUDE:

- Extra-long strokes infinitely variable from 0 to maximum.
- Semi-steel cast frame and cylinder mount; use of alloy-steel, copper tubing and steel fittings throughout.
- Frictionless (Leak-proof) cylinder requires no lubrication.
- Accurate, built-in pressure gauge.
- Ram keyed to prevent rotating.
- Infinitely variable vertical adjustment.

A complete line of 28 Air Presses is now offered by Famco. Models include: basic (illustrated), single or dual air controls, in floor or bench types.

Designed especially for heavy, continuous production use. Famco Air Presses owe their amazing performance to the frictionless cylinder and precision-machined components—your assurance of millions of strokes without the maintenance problems caused by faulty piston rings, leakage, exploded cylinders, etc. For further information see your Dealer, or write for free illustrated catalog.

FAMCO MACHINE CO. • 3110 SHERIDAN RD. • KENOSHA, WIS.

famco COST CUTTING **machines**

ARBOR PRESSES • DRILL PRESSES • BAND SAWS • AIR PRESSES
POWER PRESSES • FOOT PRESSES • SQUARING SHEARS

If you write maker identify as IEN - 363

The DURANT "SP"

Predetermined Counter

(CLOSES SWITCH AT END OF PRE-SET COUNT)

PREVENTS COSTLY OVERRUNS

This SMALL, COMPACT Productimeter has hundreds of applications in all phases of industrial production. Make exact production runs to any predetermined count you set.

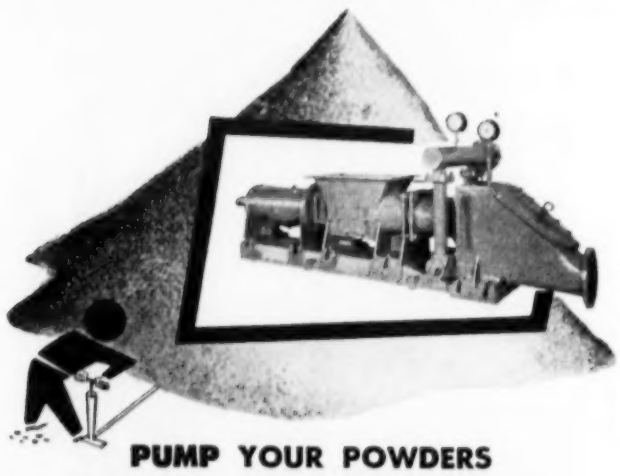
Extremely rugged, fast and accurate the "SP" Productimeter will eliminate wasteful over- or under-runs. It will turn on a light, ring a bell or stop the machine. Available in ROTARY or STROKE models.

Send for Catalog No. 501

DURANT MANUFACTURING CO.
1930 N. Buffum St., Milwaukee 1, Wis.
130 Orange St., Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS SINCE 1879 *Count Everything*

If you write maker identify as IEN - 364



PUMP YOUR POWDERS with a FULLER-KINYON SYSTEM!

Powders that can be aerated flow like water—anywhere in a plant—when they're pumped by Fuller-Kinyon. Such dry, pulverized materials can be automatically distributed to any desired number of bins in sequence. No dust nuisance . . . no waste . . . safe . . . sanitary . . . low power . . . low maintenance. If you have a bulk dry material handling operation, it will pay you to ask Fuller about it. Write for further information.

P-122

FULLER COMPANY, Catasauqua, Pennsylvania
Chicago 3—120 So. LaSalle St.
San Francisco 4—420 Chancery Bldg.
7256

Fuller DRY MATERIAL CONVEYING SYSTEMS AND COOLERS • COMPRESSORS AND VACUUM PUMPS • FEEDERS AND ASSOCIATED EQUIPMENT

If you write maker identify as IEN - 365

Over 85% of the torque wrenches used in industry are

STURTEVANT TORQUE WRENCHES

Read by Sight, Sound or Feel

- Permanently Accurate
- Practically Indestructible
- Faster—Easier to use
- Automatic Release
- All Capacities

in inch ounces
...inch pounds
...foot pounds
(All sizes from 0-6000 ft. lbs.)

Every manufacturer, design and production man should have this valuable data. Sent upon request.

P.A. STURTEVANT CO.
ADDISON QUALITY ILLINOIS

If you write maker identify as IEN - 366

LADDER . . Hinged assembly of rungs and steps, 4 to 16 ft. sizes

Source: DAYTON SAFETY LADDER CO.
2337-41 Gilbert Ave., Dept. C, Cincinnati 6, Ohio

Takes two men

Illustrated is recently improved assembly of the company's combination platform ladder on which two men can work at the same time. Steps are mounted on one side and rungs on the other. There is a hinged platform near the top. The rungs are reinforced with steel truss rods. The shelf is sufficiently strong to carry a worker's weight safely.

If you write maker identify as IEN - 367

ADHESIVE . . Vinyl liquid for plastic, metal, glass, cloth, wood

Source: CHEMICAL DEVELOPMENT CORP.
10 Endicott St., Danvers, Mass.

Single gallon lists at $5.25

Number 201 is one of three new vinyl adhesives. It consists of several strong solvents and penetrants and is intended particularly to bond vinyl film to itself. Number 202 is a bodied or slightly viscous adhesive to bond vinyl film to itself, particularly on rough or poorly mated surfaces. Number 203 will bond vinyl plastics to metal, glass, paper, leather, wood. It produces a quick initial bond and sets rapidly. All three are packaged in various quantities ranging from quarts to drums. All are crystal clear and non-staining. They air dry without heat or pressure.

If you write maker identify as IEN - 368

REAMING . . Spiral toothed tool removes burrs from pipe and conduit

Source: RIDGE TOOL CO.
352 Clark St., Elyria, Ohio

Cuts without chatter

Operator effort is minimized by this new spiral toothed Type 2S pipe reaming tool in removal of burrs from the inner edges of the pipe and conduit. The tooth section is made of tool steel. Pipe capacity is from ⅛ to 2 inches. The tool can be supplied with a ratchet handle. The head is available alone for use in the ratchet handle of the Ridgid No. OOR threader. The tool will cut holes in sheet metal also.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 369

. . . AND HERE'S WHY

Falls, blows, oil, acids, sunlight and moisture little effect the life or performance of JOY electric plugs or receptacles. Molded as one-piece Neoprene units they can't crack or shatter and won't become "out-of-round". Before you buy, it will pay you to learn why these and other worthwhile features have made them an outstanding choice of American industry.

1. Sturdy one-piece cable-connector assembly.
2. Safe, long lasting resilient Neoprene jacket.
3. Water-Seal prevents moisture infiltration.
4. Contacts firmly embedded in connector body.

Consult a JOY Engineer or write for your free copy of Bulletin MC108 on the JOY electric connector family today.

OVER 100 YEARS OF ENGINEERING LEADERSHIP

JOY MANUFACTURING COMPANY
HENRY W. OLIVER BUILDING, PITTSBURGH 22, PENNSYLVANIA
IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

If you write maker identify as IEN - 370

THEY'RE

RESOLITE SHATTERPROOF LIGHTS!

Every factory or shop subject to severe vibration, concussion, intermittent radiant heat and other causes of glass pane breakage, should be glazed with shatterproof, crackproof RESOLITE.

Pale green Resolite provides high light transmission, excellent light diffusion and visual comfort. Resolite is molded of polyester resins, reinforced with Fiberglas mat. It is unaffected by weather extremes of heat, cold or moisture and inert to industrial fumes.

For glazing partitions or similar use, Resolite is supplied in flat sheets up to 42" x 96", in standard or extra heavy weights, and in eight colors. Sheets or lights are cut at the factory to specified dimensions, but may be cut on the job, when necessary, with a hand or disk saw. Standard glazing methods are used to install Resolite.

Resolite is also supplied in standard corrugated roofing sheets for simplified skylighting.

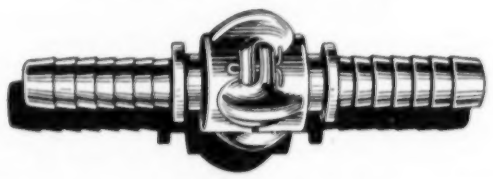
For complete information and name of nearest distributor, write:

Route 19

RESOLITE Corporation • ZELIENOPLE, PA.

If you write maker identify as IEN - 371

"AIR KING"



QUICK-ACTING, UNIVERSAL TYPE

HOSE COUPLING

A strong, durable coupling for quick, tight connections on field or factory air hose. Plain design — no parts to get out of order or clogged with dirt. Made in hose ends and male and female threaded pipe ends. Completely interchangeable. Patented safety locking device is proof against vibration and rough handling. Malleable iron (rustproofed) or bronze.

From Your Hose Supplier or Industrial Distributor

DIXON VALVE & COUPLING CO.
PRODUCERS OF *The Quality Line* COUPLINGS • NIPPLES • MENDERS • CLAMPS
"BOSS" "G.J.-BOSS" "DIXON" "KING" "AIR KING" "DIX-LOCK"
PHILADELPHIA, PA. BRANCHES: CHICAGO • BIRMINGHAM • LOS ANGELES • HOUSTON

If you write maker identify as IEN - 372

WAR & INDUSTRIAL NEW • USED **SURPLUS BARGAINS** SAVE UP TO 85% 1001 ITEMS

MAGNETIC PILOTED PISTON VALVES TYPE K-15
Pilot piston operated, packless, current failure, solenoid valves that provide on-off control of fluids or gases in response to two-wire electrical circuits. Suitable for use with oil, water, air, commercial gases, steam, Freon, CH.Cl, SO₂, and brine. Mfg. General Controls. WP 300 P.S.I. @ 275° F. Write for information where specifications are critical.
BRAND NEW ..... $45.00 ea.

ELECTRIC OIL HEATER (Immersion Type)
Immersion type electric oil heater adaptable for a wide range of applications throughout industry. Mfg. Westinghouse Electric. Style # 1214510. 115 volts, variable wattage 200-400-800.
BRAND NEW ..... $6.95 ea.

SYNCHRONOUS SELSYNS
110 Volt, 60 Cycle, Brass Cased, approximately 4" diameter x 6" length. Mfg. by Diehl and Bendix. Quantities available.
REPEATERS $20.00
TRANSMITTERS $20.00

POWER RHEOSTATS
Standard brands: 5 Ohms; 100 watt; 4.48 amps. 100 Ohms; 100 watt; 1.0 amp.
BOXED BRAND NEW with Knob $2.50 ea.
1 Dozen $25.00

HELIOS IMPORTED GERMAN PRECISION TOOLS

No. 213-A MICROMETER 1/10,000"...0-1"
Ratchet stop and locking ring. Threads ground and lapped. Polished Bow . . . Comes in wooden box.
Brand New! ..... $12.95 ea. Postpaid

No. 64 VERNIER CALIPERS
For inside and outside measurements. 1/1000" & 1/128" verniers. Measuring range 8". Engraved graduation divisions. Measuring range 12".
Brand New ..... $9.95 ea. Postpaid

No. 65 VERNIER CALIPERS
For inside and outside measurements. With points. 1/1000" and 1/128" verniers. Measuring range 8 inches. Engraved graduation divisions. Measuring range 12".
Brand New ..... $10.95 ea. Postpaid

No. 76 DEPTH GAUGE
Narrow measuring stock. 1/1000" and 1/128" verniers.
Measuring range 8": length of jaws 1¼".
Measuring range 12": length of jaws 3½".
Measuring range 6": length of jaws 4". Brand New ..... $7.95 Postpaid

ALL EQUIPMENT FULLY GUARANTEED

PRICES F.O.B. PASADENA UNLESS OTHERWISE QUOTED • PLEASE ENCLOSE FULL AMOUNT WITH ORDER

C & H SALES COMPANY
BOX 356-JE • East Pasadena Sta. • Pasadena 8, California

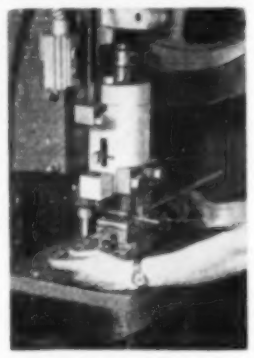
If you write maker identify as IEN - 373

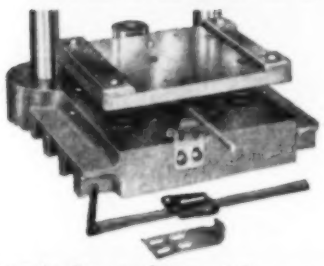
Adjustable Automatic Stock

FEED STOP for DIES

Dahlstrom Light Duty

AUTOSTOP





No drill jig...
No slotting...
No milling...

$1.75

Tested and improved through the years, the Dahlstrom Autostop will save hours of your high priced labor. Adjustable to work with blanking, progressive and compound dies. Mounts on stripper plate in 15 minutes. Handles sheet steel up to 1/16" x 6" or equivalent weight.

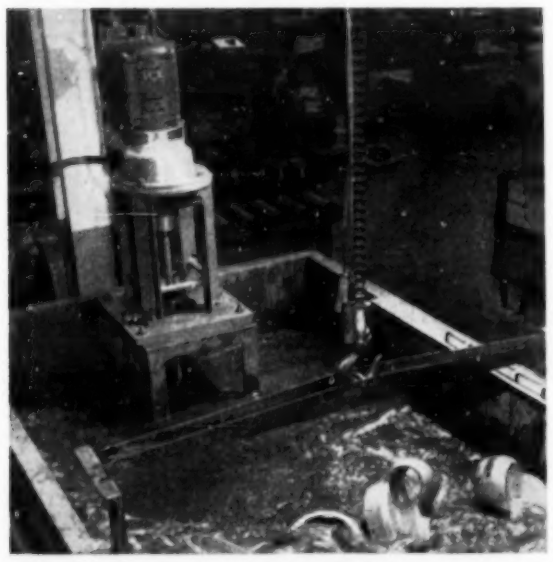
TO INSTALL: Just drill one 7/36-inch hole, then drill and tap four mounting holes per directions. That's all there is to it!

Trial order $1.75 each; lots of 12 $1.50 each. State whether for use on compound or progressive dies. *Write for free pamphlet.*

By the makers of the DAHLSTROM TAP GUIDE

Branch **MANUFACTURING COMPANY**
NORTH BRANCH • MINNESOTA

If you write maker identify as IEN - 374



Lightnin® Mixers

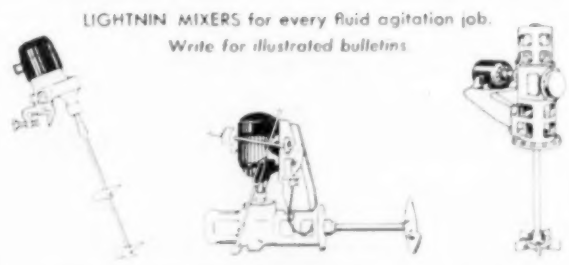
CLEAN—DEGREASE SMALL PARTS *IN 5 MINUTES!*

Cleaning small parts in a LIGHTNIN-agitated solvent bath is 50% faster than ordinary dipping. Grease, loose chips and dirt are washed away in five minutes, on the average. The LIGHTNIN Mixer gives fast, thorough turnover of solvent, violently agitating every part of the bath for even, uniform cleaning. Hand scraping and scrubbing are eliminated.

LIGHTNIN Mixers speed up the cleaning action of any commercial solvent. They are easily installed in any cleaning tank. The mixer is supplied as a packaged unit, ready to install and run. Every LIGHTNIN Mixer is guaranteed to do the job for which it is recommended.

For correct size and full details, send us dimensions of your cleaning tank, type of solvent used, and number, size and shape of parts to be cleaned at one time.

LIGHTNIN MIXERS for every fluid agitation job.
Write for illustrated bulletins



PORTABLE ⅛ to 3 HP. | SIDE ENTERING 1 to 25 HP. | TOP ENTERING 1 to 500 HP.

MIXCO® fluid mixing specialists
MIXING EQUIPMENT Co., Inc.
124 Mt. Read Blvd., Rochester 11, N. Y.
In Canada: William & J. G. Greey, Ltd., Toronto

If you write maker identify as IEN - 376

WELDING . . AC arc machine, to 500 amp., has starting arc booster

Source: LINCOLN ELECTRIC CO.
Box 3035-A, Cleveland 17, Ohio

Self-starting arc

Three new sizes, rating 300, 400 and 500 amp., have been added to the company's Fleetwelder line of ac. arc welding machines. Each is featured by its use of a built-in Arc Booster which provides an extra burst of welding current, momentarily, when the operator strikes an arc. The action is completed in about 0.25 sec. after which the welding current returns to the setting established at a crank operated adjustment and indicator dial on the face of the housing.

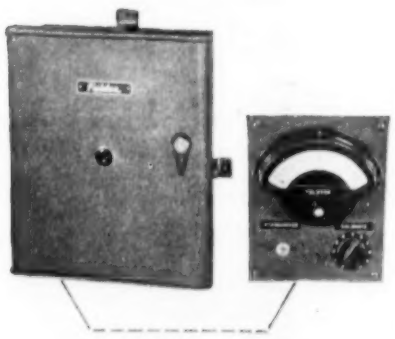
Open circuit voltage is limited to 71 volts, the Arc Booster making any higher voltage unnecessary. A safety contactor can be specified to further limit the open circuit to 24 volts when additional protection is required.

Booster action is selected "high" for general work, "low" for thin sheets or can be cut out entirely when the machine is employed with a single carbon for brazing or in connection with an arc torch. Selection is made at a three-point switch, also on the housing face. The machine is available for single phase operation on 220 to 550-volt 50 or 60-cycle ac. Overall dimensions for all three machines are 22 by 26 by 35 inches. Weight is 495 to 660 pounds.

If you write maker identify as IEN - 377

GAGE . . Electronic equipment reads materials level in tank or bin

Source: FIELDEN INSTRUMENT CORP.
2918-22 N. 4th St., Philadelphia 33, Pa.



Conductivity not a factor

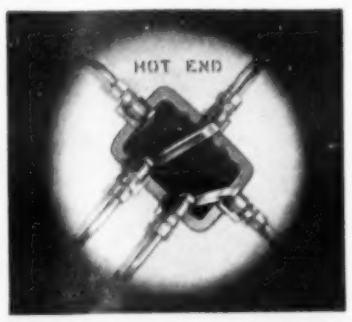
Telstor is a new electronic assembly employing an insulated electrode, amplifier and indicator to read the level of a liquid, dry granular or powdered material in a storage container. It applies equally well in an open bin, hopper or tank or in a pressure vessel or reservoir. The electrode is mounted to extend from the top to the bottom of the storage space where it serves as one side of a radio frequency capacitor. The walls of the container constitute the other side.

The material in storage changes capacitance in the circuit depending on its depth. This change is employed to operate the indicator. The equipment is characterized by the absence of moving parts and pipe. A false signal cannot occur due to materials bridging over the electrode since the action is dependent on the full covered length of the electrode. Operation is on 110-volt 60-cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 378

SQUARE NICKEL ALLOY TUBING SOLVES TEMPER AND WEAR PROBLEM



WEAR RESISTANCE . . . the ability of small, square, water-cooled tubing to stand up to the abrasion of 25 pound hot-rolled steel slugs sliding over it for weeks on end was the need of one Superior customer. Attempts to solve the problem involved the use of various metals in many tempers . . . even included the use of hard, facing alloys and heat dissipating fins. When the answer was finally found—Superior had it. We now draw for this customer a nickel alloy tubing tough enough to do even this tough job without need for hard, facing alloys or other special handling.

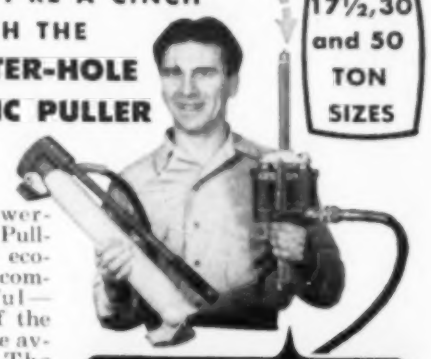
IF YOU are using fine small tubing that doesn't quite perform up to requirements it will probably pay you well to check with Superior. We may be able to help from our production of tubing in all analyses from .010" to ⅝" O.D. and in certain analyses (.035" max. wall) up to 1⅜" O.D. Outline your problem or application today in a letter to

SUPERIOR TUBE COMPANY
2016 Germantown Avenue
Norristown, Pennsylvania

If you write maker identify as IEN - 379

OTC TOUGH JOBS! THEY'RE A CINCH WITH THE CENTER-HOLE HYDRAULIC PULLER

17½, 30 and 50 TON SIZES



Famous OTC CENTER-HOLE Ram permits fast, easy adjustment to the work and interchange from push-puller to sleeve puller to bench press.

The OTC Power-Twin Hydraulic Puller is an ideal, economical tool, compact, powerful—handles 95% of the press work in the average shop. The Power-Twin may be detached from press—used as portable ram—speeds up pulling and installing jobs 75%, eliminates torque—remote control provides safety.

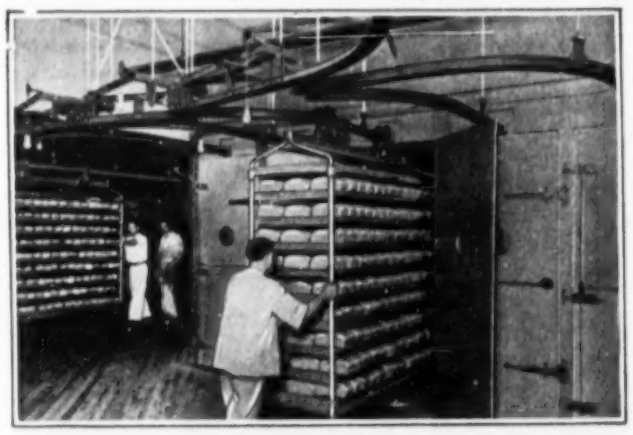
A complete range and variety of Pullers, Adapters and Attachments are available to pull or install sleeves, bearings, races, gears, pinions, couplings, etc.

Amazingly efficient combination of Portable Pedestal Press and 17½ ton Power-Twin Hydraulic Puller. Every shop will find this unit a must . . . first few jobs pay for it in time, tools and money saved. Move it where you want it . . . it's portable.

See your OTC jobber or write us . . . today.

OWATONNA TOOL CO.
371 CEDAR ST. OWATONNA, MINN.

If you write maker identify as IEN - 380

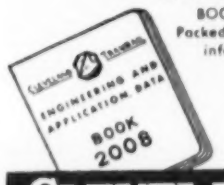


RACK CARRIERS
Handle Big Loads Easily

Bakery goods, foundry cores, machine parts, china ware and hundreds of items are being handled easily, quickly and safely with low cost overhead Tramrail Systems.

One man pushes many tons with little effort. No wear on floors. Overhead track always smooth. No floor congestion. Provides efficient handling routine.

GET THIS BOOK!
BOOK No. 2008
Packed with valuable information...

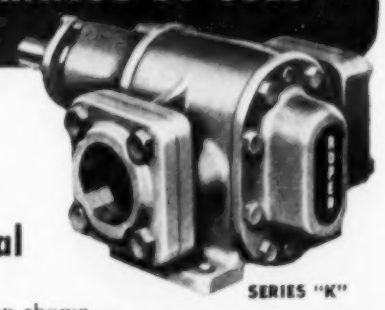


CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4235 East 285th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL

If you write maker identify as IEN - 381

ROPER rotary PUMPS
DEPENDABLE SERVICE FOR A WIDE RANGE OF USES



- **Quiet**
- **Efficient**
- **Economical**

SERIES "K"

The *Series K* pump shown — for hydraulic service and fuel supply — is one of four standard models in the Roper line. Others include: *Series F* for use with clean liquids of all kinds; *Series H* for high pressure applications, especially hydraulic mechanisms; and *Series 3600* for general purpose work handling thin or thick liquids. Roper Pumps are noted for quiet operation, high volumetric efficiency, and ruggedness coupled with compact design. Models are standard fitted or bronze fitted; can be supplied with or without built-in relief valve. Sizes range from 3/4 to 300 G.P.M. — Pressures to 1000 P.S.I. Send for catalog to know complete details.

GEO. D. ROPER CORP.
201 Blackhawk Park Ave.
Rockford, Illinois

ROPER *Rotary Pumps*

If you write maker identify as IEN - 382

The Really Rugged Bar Iron Truck You've been waiting for!

Heavy duty for bars, tubes and angles.

LANSING COMPANY

TRUCKS · BARROWS · CARTS
TRAILERS · CASTERS · SKIDS

"Keep Your Products on Wheels"

Main Office and Factory: LANSING, MICH.

If you write maker identify as IEN - 383

Model 218

Defense orders are coming to the clean plants because they can handle production efficiently. Be sure your plant operation is not handicapped by litter, dirt or other debris.

Send today for important Doyle Vac-It information. There's no obligation.

Doyle VACUUM CLEANER CO.

2235 Stevens St., S. W. Grand Rapids 7, Mich.

If you write maker identify as IEN - 384

ZIP OFF

SCALE
RUST
PAINT

with

AURAND CLEANING TOOLS

AURAND rotary chipping action quickly, easily, thoroughly removes scale, paint, rust and other accumulation from any hard surface. Renewable cutter heads and fool-proof cutting depth adjustment allow the unskilled operator to produce perfectly clean surfaces. Available in electric or pneumatic models. Write today for further information on cleaning your iron, steel, brick, concrete, and other hard surfaces.

Get the time and money-saving facts

GET THE TIME AND MONEY-SAVING FACTS WRITE TODAY TO DEPT. 649

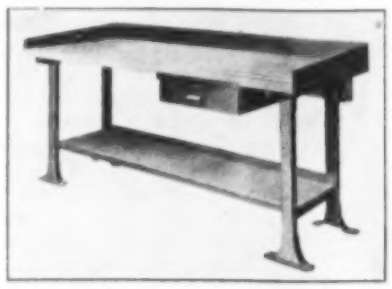
AURAND MFG. & EQUIP. CO.

2643 Colerain Avenue • CINCINNATI, OHIO

If you write maker identify as IEN - 385

FURNITURE . . Steel work table mounts a laminated maple wood top

Source: INDUSTRIAL BENCH & EQUIPMENT MFG. CO.
95-99 South St., New Britain, Conn.



Top is sanded and waxed

Hard maple is kiln dried and cut into strips measuring about 2 in. in width by 1¾, 2¼ and 2⅝ in. in thickness. The strips are joined, glued and reinforced with concealed bolts to form the top of this bench. It is now being manufactured by the company following acquisition of the shop furniture division from New Britain Machine Company.

Top dimensions range from 24 to 42 in. in width and from 8 to 10 ft. in length. Additional width to 48 in. and length to 16 ft. can be specified. The legs, drawer and shelf are steel.

If you write maker identify as IEN - 386

BUILDING . . Translucent sheets for windows, skylights, partitions

Source: PLEXOLITE CORP.
4221-25 W. Jefferson Blvd., Los Angeles 16, Calif.

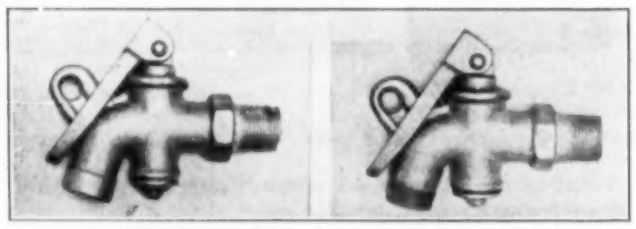
Can be sawed, nailed, drilled

The company announces availability of a new corrugated sheet and also a new flat Fiberglas reinforced plastic sheet weighing 4 oz. per square foot. It represents a further development of the heavier translucent sheet, previously described IEN-138-52. The new material is suited for glazing, for skylights, canopies, awnings. It transmits about 80 per cent of daylight softly diffused. Sheet sizes are to 36 by 120 inches. Five colors include clear, white, slate, green, yellow.

If you write maker identify as IEN - 387

VALVE . . Barrel faucet, ¾ in., plain or pipe threaded outlet

Source: MORSE MFG. CO.
120-24 Dickerson St., Syracuse 2, N. Y.



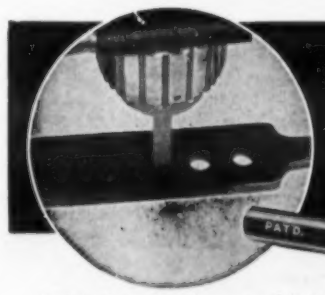
Can be padlocked in closed position

Shakeproof cupped spring washers exert even pressure to keep the plug seated in this new drum faucet. It is made with a ¾-in. pipe threaded shank and is available with a No. 40F threaded hose connection or in plain outlet design. Material is gray iron. Finish is with aluminum lacquer. Application can be made on any non-corrosive liquid.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 388

Drill Hardened Steels without Annealing –



USE The New IMPROVED "HARDSTEEL" DRILL

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY, INC.
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of—BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS

Write for information

If you write maker identify as IEN - 389

WHAT'S NEW?

TYPE "U"

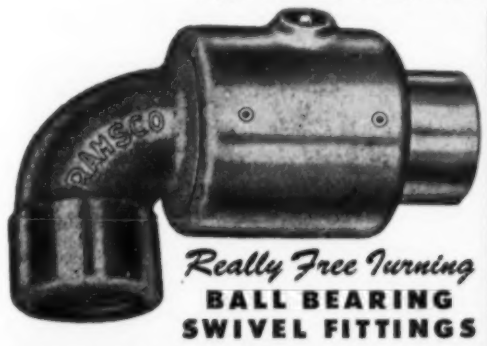
QUICK FACTS:

A new BJ pump series. Single stage. Horizontally split case. Sizes from 2" to 8". Capacities from 50 to 3500 gpm. Favorable price due to standardized construction. Easy inspection or repairs without disturbing driver or piping. Precision, double row ball bearings. Double suction impeller (except on smaller sizes). Choice of flexible metal or rubber jaw coupling. Choice of base plates—cast iron (with drip pan) or fabricated steel (with drain rim). BJ Mechanical Seal available as extra equipment.

Byron Jackson Co. *Since 1872*
P.O. Box 2017, Terminal Annex, Los Angeles 54

BJ QUALITY PUMPS

If you write maker identify as IEN - 390



Really Free Turning
BALL BEARING SWIVEL FITTINGS

RAMSCO

FOR LIQUID GASES, STEAM, AND CHEMICALS. HOT OR COLD SERVICE. CONTINUOUS OR OCCASIONAL ROTATION.

360° FREE ROTATION—1, 2 AND 3 PLANES
FITTINGS AND PRESSURES TO 15,000 P.S.I.
AND TEMPERATURES TO 750° F.

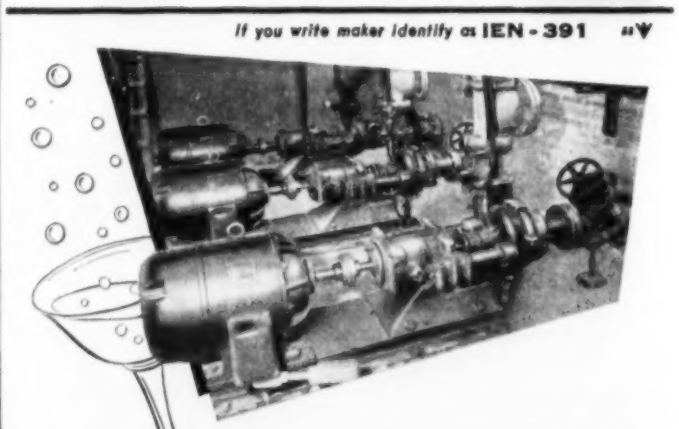
Over 500 sizes, types, styles. Low pressure fittings ⅜" to 14". High pressure and high temperature ⅜" to 6". Universal service (U. S. type) fittings and pressures to 1,000 psi. Temperatures to 750° F. asbestos packed. When packed with teflon ideal for corrosive service. Gear driven types for loading racks also available.

Send for complete catalog and prices. State kind of service, pressure, temperature, pipe size and indicate style at right, threaded, flanged or weld ends.

RAMSCO

RASMUSSEN MFG. CO.
12305 INDUSTRIAL AVENUE
HOLLYDALE, CALIFORNIA

If you write maker identify as IEN - 391



Guzzling Corrosive Cocktails To Make Better Copper

Making "grade A" copper depends on the constant circulation of hot, corrosive copper sulphate. This battery of Nagle type TW pumps guzzles hundreds of gallons of this metal-ravaging mixture a day in a smelting and refining plant. Famous Nagle features like these will keep on the job years longer; select corrosion-abrasion alloys for water end parts, ample slippage seal adjustment, maintenance that is a marvel of simplicity. Follow the lead of hundreds of Nagle pump users. Write today for the complete Nagle solution to your most corrosive or abrasive pumping problems . . . vertical, horizontal and self-priming.

NAGLE PUMPS

NAGLE PUMPS, INC.
1241 CENTER AVENUE, CHICAGO HEIGHTS, ILLINOIS

PUMPS FOR ABRASIVE AND CORROSIVE APPLICATIONS

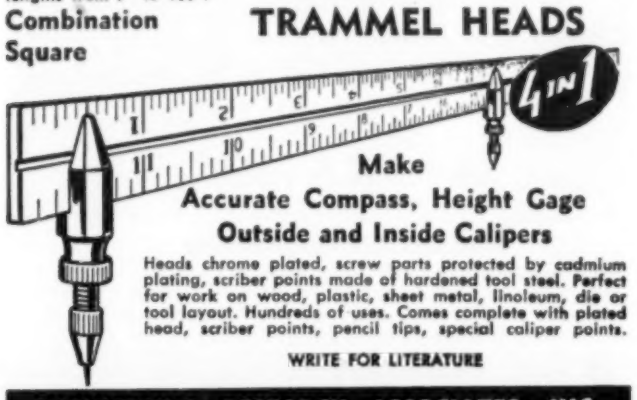
If you write maker identify as IEN - 392

Used by Leading Draftsmen and Designers for INKING and PENCIL DRAFTING

A fine precision tool. Hair-line adjustment quickly made and maintained by spring-loaded knurled thumb rollers. No screws or clamps. Lead expeller for easy control of lead length. Slides instantly interchangeable to any beam length. Made of anodized aluminum, stainless satin finish. Beam lengths from 7" to 100".

Combination Square

TRAMMEL HEADS



Make Accurate Compass, Height Gage Outside and Inside Calipers

Heads chrome plated, screw parts protected by cadmium plating, scriber points made of hardened tool steel. Perfect for work on wood, plastic, sheet metal, linoleum, die or tool layout. Hundreds of uses. Comes complete with plated head, scriber points, pencil tips, special caliper points.

WRITE FOR LITERATURE

ENGINEERING RESEARCH ASSOCIATES, INC.
3475 East Nine Mile Road Hazel Park, Michigan

If you write maker identify as IEN - 393

Stop bothersome Blink...Blink...Blink

WITH WATCH DOG NO-BLINK FLUORESCENT STARTERS

- **Watch Dog* starters *stop blinking*** by automatically turning off a failing fluorescent lamp.
- **Watch Dog starters *keep the lamp off*** until the red reset button is pushed when new lamp is installed. No recurrent blinking every time lights are turned on.
- **Watch Dog starters *last longer***—by as much as 10 to 1. Ballasts last longer, too.

You can stop blinking—cut starter replacement costs—cut ballast replacement costs—by changing to General Electric Watch Dog no-blink starters. For more information, write Section Q29-142, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

For all replacement needs—use the famous Watch Dog no-blink starter with the red reset button.

And look for this tag when you buy fluorescent fixtures. It's your guarantee that the fixture is equipped with G-E Watch Dog starters.

*Registered Trade-mark General Electric Company

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 395

HEATING . . Gas-oxygen torch to work Pyrex, Vycor or quartz

Source: RESEARCH VACUUM SUPPLY CO.
3436 W. Montrose Ave., Chicago 18, Ill.

For glass blowers, $27.50

No. RV-2000 is a new torch designed to burn any type gas with oxygen for work on Pyrex and Vycor laboratory glass, or to burn hydrogen and oxygen when working on quartz. Adjustments are made by turning a sleeve at the tip of the torch. No extra tips are required. The torch can be set for small to large sealing flames, a wide range for annealing and a wide and long brush flame. Gases are mixed in the burner assembly and are burned noiselessly at the tip. There is no danger of flash back. Finish is in bright chromium.

If you write maker identify as IEN - 396

PAINTING . . Baking enamel for hammer finish on metal products

Source: MONROE SANDER CORP.
10-20 46th Ave., Long Island City 1, N. Y.

For appliances, toys, cabinets

Sanco Hammer Finish is a new baked enamel for production use on metal products. It is applied by spraying and calls for baking for ½ hr. at 300 deg. F. or for 1½ min. at 425 deg. F. The enamel is available in a variety of colors. It adheres well, is chip and scratch resistant. It will cover surface imperfections with one coat and does not require a primer. Packaging is in 5-gal. cans and 55-gal. drums.

If you write maker identify as IEN - 397

SIGNALING . . Pilot indicator light for panel mounting, has plastic lens

Source: HETHERINGTON INC.
1214-18 Elmwood Ave., Sharon Hill, Pa.

Ask for Bulletin L-1

Type L-1000 is a new signaling light with a removable plastic lens that is available in amber, blue, green, red or white. The lens is held in place by an O-ring which also serves as a moisture seal. The socket takes a 6, 12 or 28-volt No. 327 miniature lamp. Assembly is in a nickel plated brass case. The design is available for either grounded or non-grounded panel mounting. The standard unit mounts in an $\frac{13}{32}$ in. hole. It weighs 0.25 oz. and measures $1\frac{5}{16}$ in. in length.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 398

C.H.F. Sectional Tables WITH SWING SEATS

MAXIMUM SEATING IN ANY SIZE SPACE

For Recreation Rooms . . . Factory Work Tables

Available in units to seat 4 to 24 people. "CHF" Sectional Tables may be purchased in varying lengths to meet your exact requirements. Seats swing completely under table out of the way to give you full aisle space. Your choice of seats . . with or without backs . . . cast iron frame construction in a variety of colors. "CHF" Sectional tables are standard equipment for schools, factories, clubs, churches and all types of institutions.

WRITE FOR ILLUSTRATED CATALOG AND PRICE LIST!

THE CHICAGO HARDWARE FOUNDRY CO.
"Dependable Since 1897"
3413 Commonwealth Avenue
NORTH CHICAGO • ILLINOIS

If you write maker identify as IEN - 399

New

SOUTH BEND GRINDER

A ruggedly built grinder that will give long, dependable service under hard use. Motor is enclosed in pedestal and drives through a V-belt. This removes weight of grinding wheels from motor bearings and practically eliminates vibration, Moreover, it shields motor and provides greater work clearance.

SPECIFICATIONS

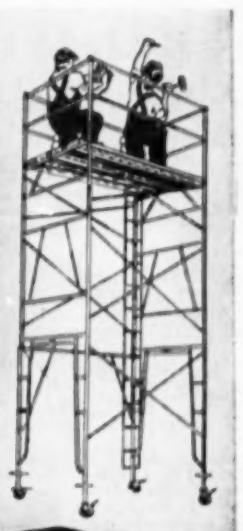
Wheel Size: 8" dia. (½ h.p. motor), 10" dia. (¾ h.p. motor).
Spindle: Approx. speed 2450 r.p.m. Sealed ball bearings.
Motor: Standard 2875 r.p.m. 50 cycle or 3450 r.p.m. 60 cycle. Also D.C.
Over-all Dimensions: 49½" high, 18" wide, 20½" deep (10" Grinder ½" wider).

Write for literature on this and other machine tools.

SOUTH BEND LATHE
SOUTH BEND 22, INDIANA
Building Better Tools Since 1906

If you write maker identify as IEN - 400

Safety is no Accident!



It's engineered into SAFWAY maintenance towers

Only Master Welders work on SAFWAY Equipment

Interchangeable parts constructed by safe, strong, lifetime welding of high carbon steel tubing.

All SAFWAY Equipment Treated with Rust Inhibitor

Maintains accurate fit of parts and fasteners to assure safe, rigid maintenance towers.

Enamel is Baked on All Surfaces, Inside and Out

Improves appearance of equipment—helps insure lasting fit of parts and long, safe life.

All SAFWAY Equipment is Engineered to Last

With only routine care, Safway equipment will deliver a lifetime of safe, efficient service.

Write for Free Bulletin IEN 153

RENTED and SOLD by distributors everywhere

SAFWAY STEEL PRODUCTS INCORPORATED
6228 West State St.
MILWAUKEE 13, WIS.
Manufacturers of Tubular Steel Scaffolding and Equipment

If you write maker identify as IEN - 402

WICKWIRE ROPE SLINGS

in braided and single part construction

Braided slings made by Wickwire give you these advantages:

- Extreme flexibility
- Non-kinking properties
- Better conformation to irregular surfaces
- More even load distribution
- Will not take a permanent set

Write or call our nearest sales office for full details.

THE COLORADO FUEL AND IRON CORP.—Abilene (Tex.) • Denver Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORP.—Los Angeles • Oakland Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION—Boston • Buffalo • Chattanooga Chicago • Detroit • Emlenton (Pa.) • Philadelphia • New York

WICKWIRE ROPE

PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 403

HANSEN COUPLINGS

Give You 2 Big Advantages

Locking pins in Hansen Push-Tite Coupling Socket afford large area contact with plug, thereby preventing wear and subsequent leakage.

● To connect a Hansen coupling, you merely push the plug into the socket with one hand. Flow is instantaneous. To disconnect, push back sleeve on socket . . . coupling disconnects. Flow is shut off instantly and automatically.

One-way shut-off, two-way shut-off, and straight-through types. Write for Catalog

THE HANSEN MANUFACTURING COMPANY
4031 WEST 150th STREET • CLEVELAND 11, OHIO

If you write maker identify as IEN - 404

INCREASES TAP LIFE

by Guided Accuracy

Quickly pays for itself on small-lot tapping operations. Insures accurately tapped holes, increases work output—practically eliminates tap breakage and removal. Has slotted base for fixtures. Special steel machined parts. Long spindle bearing provides accurate alignment and long life. Four hardened collets, furnished, handles standard tap shank sizes from No. 0 through ¼". Either right or left hand taps may be used. Finished in machine-tool gray. Write for circular.

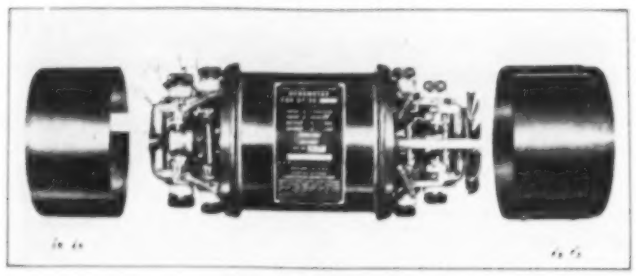
$20.50 POSTPAID

H. D. HERDER TOOL SPECIALTIES
2724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

If you write maker identify as IEN - 405

GENERATOR . . With integral motor, 6, 12, 24 volt input, 500 volt output

Source: ELECTRO ENGINEERING PRODUCTS INC.
607-11 W. Lake St., Chicago 6, Ill.



Three units in one

Four commutators in this new Model ES-129 unit in the company's Dynamotor line permit connections for 6, 12 or 24-volt power supply to produce 0.1 amp. at 500 volts on the output side. The unit is designed for continuous service with rated temperature rise of 50 deg. C. It measures 10¼ by 4½ in. and weighs 11½ pounds. Applications are in connection with communicating equipment and laboratory work where the power supply is variable.

If you write maker identify as IEN - 406

CLEANING . . Stain removing liquid contains lanolin for a worker's hands

Source: MIRACLE ADHESIVES CORP.
214 E. 53rd St., Dept. 235-A, New York 22, N. Y.

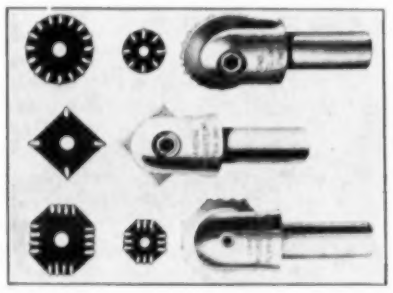
List is $1 for 8 oz. bottle

Skidoo trade names a new waterless hand cleaning liquid. A few drops are spread on a worker's hands, are rubbed in and then wiped off to leave the hands clean, soft and smooth. The liquid is scented with honey and almond. It will remove stains of nicotine, ink, paint, carbon paper smudge, tar, grease, adhesive tape residue.

If you write maker identify as IEN - 407

GRINDING . . Wheel dressers for straight, form and profile work

Source: DIAMOND PRODUCTS INC.
320-24 Prospect St., Elyria, Ohio



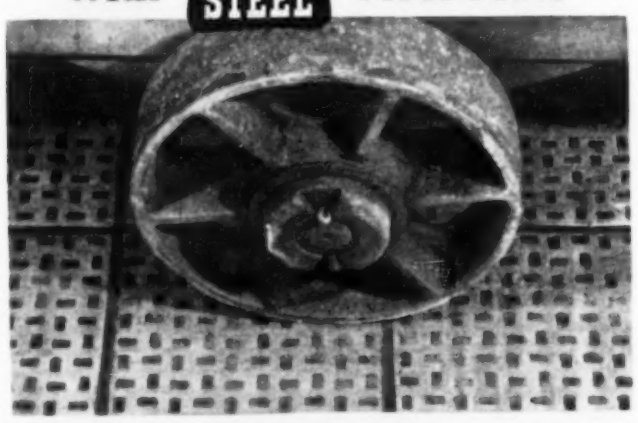
Prestalloy profile

Round, square and octagonal diamond set heads are included in this new line of dressing tools for application on the wheels on centerless, cylindrical, surface and internal grinders. The dressers can be employed in vertical or horizontal position. They will dress any type and size of grinding wheel. The elongated West African diamonds are mounted in a Prestalloy matrix and can be completely used up without further setting.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 408

Now Make Floors Last Longer with ACME STEEL Floor Plate



Here's the economical, long-lasting, commercially proven reinforcement for concrete floor surfaces. Each Acme Steel Floor Plate protects one square foot of floor area, anchored to concrete by 100 barbed prongs. Plate cannot work loose, weave or rattle. No cutting or waste in installation. Compact, easy to handle. Provides rugged protection, longer floor life, safe floor surface for aisles, loading docks, ramps, stock rooms, warehouses. For full details, write Dept. IEN-13-F.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois

If you write maker identify as IEN - 409

TO CLEAN YOUR DIE MOLDS..

Moisture, oil and foreign matter completely removed from air lines by patented one-piece separator and eliminator chamber.

Does not waste air by continuous venting. Positive, automatic, effective for paint sprays, sand blasting, etc.

R & I E EQUIPMENT DIVISION
I-T-E CIRCUIT BREAKER CO.
GREENSBURG, PENNSYLVANIA

If you write maker identify as IEN - 410

THE NIBBLEX

even cuts
CORRUGATED SHEET METAL
as clean as a whistle!

NO SHEARING ACTION—BUT A NEW PRINCIPLE OF A DIE AND PUNCH

No Bending • No Burrs • No Rough Edges

Fits any ¼" drill, air or electric. Precision made. Weighs only 11 ozs. Still cuts up to 20 ga. regular steel, 16 ga. tempered metals. Cuts circles 1" radius. Uses side punch for corrugated sheets, straight punch for flat.

Price only $13.75 with one punch. Additional punch $3.15

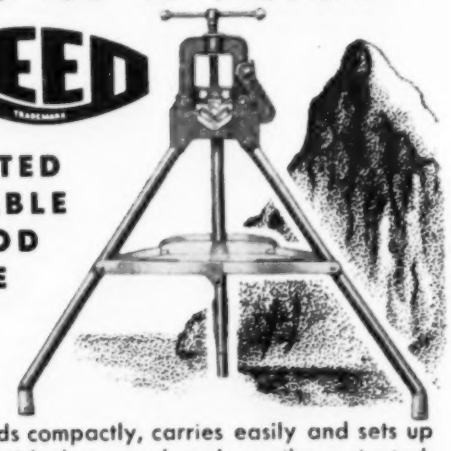
TRY IT FREE FOR TEN DAYS WITHOUT OBLIGATION
Pay only if you keep it.

Nord INTERNATIONAL CORPORATION
P. O. Box 44 N — Denville, N. J.

If you write maker identify as IEN - 411

Solid as a Rock!

the REED



PATENTED PORTABLE TRIPOD VISE

One unit. Folds compactly, carries easily and sets up instantly. A quick downward push on the patented, large-surface tray locks the stand solidly so that all cutting or threading effort goes into the work. Legs cannot buckle under any working conditions. They line up vertically with the face of the well-known REED long-jaw vise. *Ask your jobber or write . . .*

REED TRADEMARK
MANUFACTURING COMPANY
ERIE, PENNSYLVANIA

If you write maker identify as IEN-412

NEW MAGNA BIT HOLDER

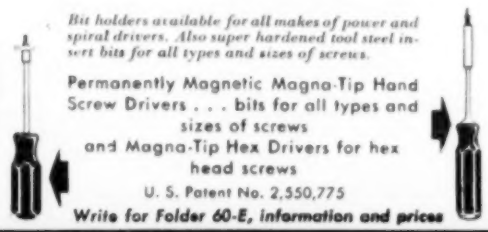
A REVOLUTIONARY, LABOR SAVING TOOL. CUTS SCREW DRIVING COSTS 3 NEW WAYS

Hand starting or *pre-positioning screws* in assembly operations is *no longer necessary*; a high energy *permanent* magnet in bit chuck holds the bit and energizes it with 10 times the "pull" to hold the screw *firmly* on bit. Labor costs are cut.

Reduces bit costs through the use of super hard, low-cost interchangeable insert bits.

Reduces bit wear and replacement since the energized bit seats itself positively in the screw slot or recess.

Bit holders available for all makes of power and spiral drivers. Also super hardened tool steel insert bits for all types and sizes of screws.



Permanently Magnetic Magna-Tip Hand Screw Drivers . . . bits for all types and sizes of screws and Magna-Tip Hex Drivers for hex head screws

U. S. Patent No. 2,550,775

Write for Folder 60-E, information and prices

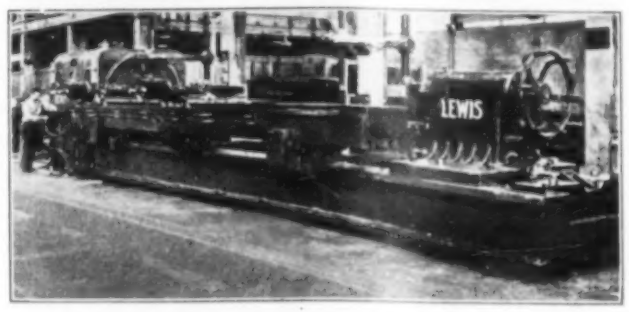
MAGNA DRIVER CORP.
779 Washington St. Buffalo 3, N. Y.

If you write maker identify as IEN-413

If you write maker identify as IEN-415

LATHE . . For heavy rolls, feeds tools by hydraulic pressure

Source: BLAW-KNOX CO.
2050 Farmers Bank Bldg., Pittsburgh 22, Pa.



Makes the big jobs easy

The company announces availability of a roll machining lathe it has had in service in its Lewis Foundry & Machine Division for some time. It is now prepared to supply this lathe to others principally for roll machining.

One or more tools can be mounted on the carriage, each being equipped with hydraulic infeed. At the same time the carriage is moved along the lathe bed by hydraulic pressure and the tailstock is moved up to the work or retracted by the same hydraulic means.

The first machine to be available is a 60-in. assembly. It is equipped with a 60-hp. main drive motor and variable speed control for work rotation between 300 and 1,200 rpm. A separate motor drives a hydraulic pump to maintain pressure at 1,000 lb. on each of the feed and tailstock cylinders.

If you write maker identify as IEN-416

CUTTING . . Portable abrasive tool for masonry, building board, metals

Source: PORTER-CABLE MACHINE CO.
1712-16 N. Salina St., Syracuse 8, N. Y.

For construction and maintenance

New tool, based upon the company's Speedmatic portable electric saw, mounts a 6, 7 or 8-in. circular abrasive blade to cut various materials including non-ferrous metals. Three types of blades include a Red Label for composition such as Transite, Mycoloy, Masonite, asbestos siding, fiber board and non-ferrous metals such as aluminum, copper, zinc, bronze. The Green Label blade cuts masonry including concrete, cinder block, brick, tile, terrazzo, marble, slate, granite, porcelain and plastics such as Lucite and Bakelite. The Blue Label blade will cut iron and steel in its various forms.

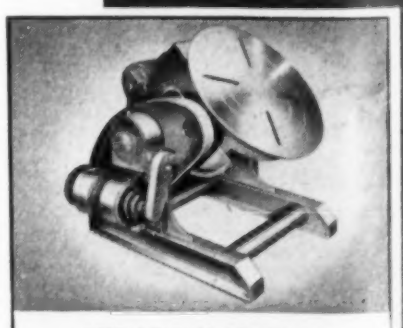
All three blades are semi-flexible reinforced design to minimize danger of breaking in service. They can be used on any portable electric saw, in addition to the company's Speedmatic unit. This tool is equipped with a kick-proof clutch so the blade can stop instantly if it jams.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-417

REED ENGINEERING COMPANY

Modern Metalworking Equipment



- BENDING ROLLS
- TURNING ROLLS
- AUTOMATIC WELDING FIXTURES

REED WELDING POSITIONER

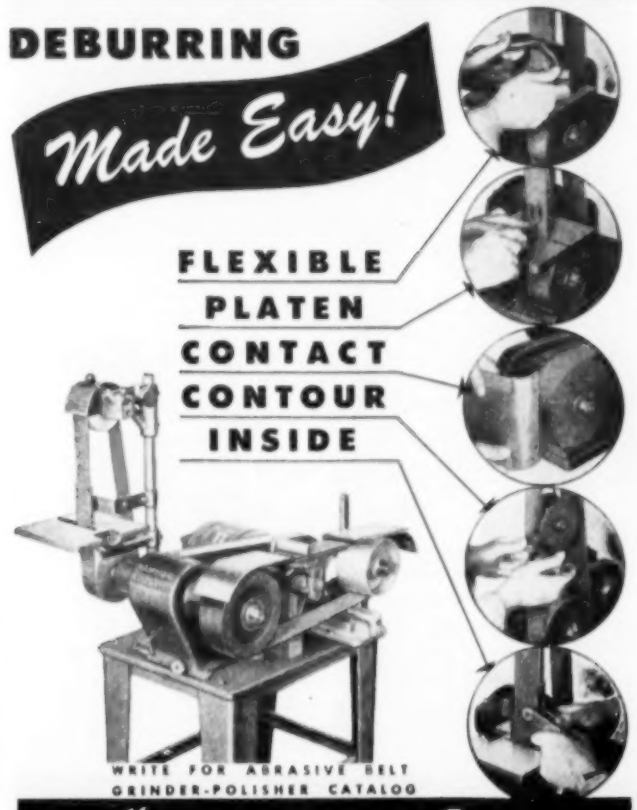
- ★ Machined face with cast-in "T" slots
- ★ Machine Tool accuracy
- ★ 10-to-1 speed variation
- ★ Ball bearing work table mounting
- ★ 1000, 2500 lb. models, hand or power tilting
- ★ Rotating ground connection

WE INVITE YOU . . . to write us for specifications, prices, list of REED users near you. No obligation. Just write on your letterhead.

REED ENGINEERING CO. 1009 W. FAIRVIEW CARTHAGE, MO.

If you write maker identify as IEN-418

DEBURRING Made Easy!



WRITE FOR ABRASIVE BELT GRINDER-POLISHER CATALOG

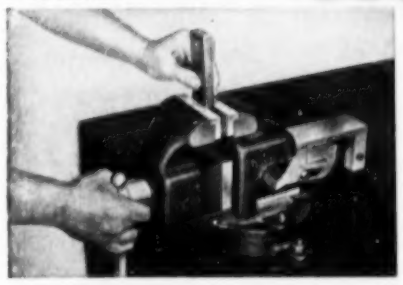
Hammond Machinery Builders INC.

1607 DOUGLAS AVENUE • KALAMAZOO MICHIGAN

If you write maker identify as IEN-419

NEW! DODGE SLIDE-SET VISE

Cut away view



SLIDES IN "NEUTRAL"!
INSTANT ACTION!
GRIPS CONVENTIONALLY!
FULL POWER!

● Entirely new in principle, with patented fast slide action that speeds work, reduces operator fatigue, saves wear on parts. All the power of a heavy conventional vise (weighs 58 pounds). Jaw slides in "neutral" before you lock it by turning handle in conventional way. No tedious "spinning" in and out. No-Pinch handle protects against blood blisters. Every Dodge Slide-Set pays dividends in greater efficiency and production. *Write now for free Bulletin.*

Dodge Manufacturing Corporation, 600 Union St., Mishawaka, Indiana

DODGE of Mishawaka, Ind.

If you write maker identify as IEN-420

If you write maker identify as IEN - 421

NEW! Tester For Pressure of RAM-ON-WORK

For Determining Total Weights or Total Pressure on Most Types of Presses

STUDEBAKER TOTAL PRESSURE TESTER

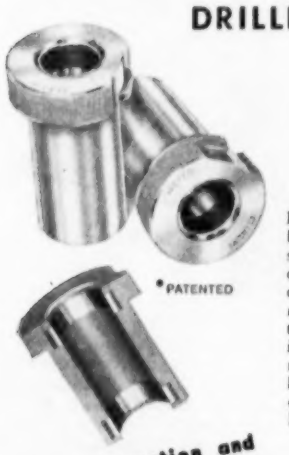
- Accurate reading
- Can be used vertically or horizontally
- Self-contained hydraulic unit
- Accurately calibrated
- Heavy duty construction
- Furnished in permanent instrument case
- Three sizes — 10M — 50M — 100M lbs.

Write for prices

Studebaker MACHINE COMPANY
1235 S. 9th Avenue • Maywood, Ill.

If you write maker identify as IEN - 422

INCREASE PRODUCTION.. SAVE TIME & MONEY ON YOUR DRILLING OPERATIONS



MEYCO
Carbide Inserted Bushings last longer, cost less in the long run

*PATENTED

Here is a bushing that combines the best features of steel and carbide; the strength of steel and the long life of carbide. First cost: slightly higher than ordinary steel bushings; their life: many, many times as great. In addition to such obvious savings, MEYCO bushings increase the life of drills and reamers, produce accurate work for a longer period of time, save on machine-down time and on nonproductive man-hours.

☆

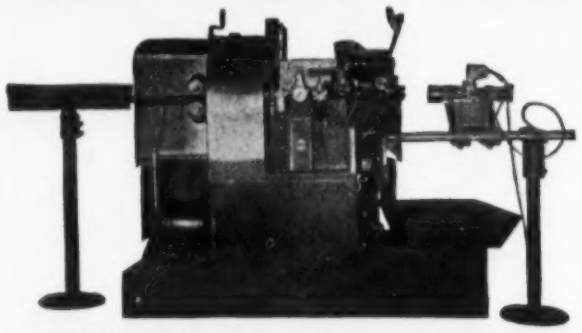
Auto manufacturer says: "... the steel bushings previously used averaged about 28 hours life. MEYCO bushings ran 1,168 hours before they were unusable."

For information and prices write for Meyco Bushing Catalog No. 18.

W. F. MEYERS CO., INC., BEDFORD, INDIANA

If you write maker identify as IEN - 423

MODERN CUTTING-OFF MACHINE



Cuts off longer pieces than regular automatic machine — *any length you want.* FAST cutting and chamfering of tubing, pipe, shafting. Check the following figures:

½" Tubing — Cuts and Chamfers both outside edges of ½" .030 wall tubing, 8" lengths, every 2.5 seconds.

1¼" Cold Rolled — Cuts and Chamfers both ends, 20" long, at rate of 1 every 20 seconds.

1" Tubing — Cuts and Chamfers both outside edges, pieces 3" long. One every 3 seconds.

4" THREADED STUDS

These popular time saving machines are now available in 4 sizes, handling work up to 6¼" O.D.

Cut and chamfered at one time — in 8 Sec. — from 10 ft. length of stock already threaded (¾" U. S. Standard). Clean cut. Clean chamfer. Nuts start easily, with no extra finishing required.

WRITE for CATALOG

MODERN MACHINE TOOL CO.
JACKSON MICHIGAN

If you write maker identify as IEN - 424

VENTILATING . . Duct mounted fan for exhaust duty, 12 to 48 in. diameter

Source: M & E MFG. CO.
2581 Winthrop Ave., Indianapolis 5, Ind.

Ask for Bulletin F-52

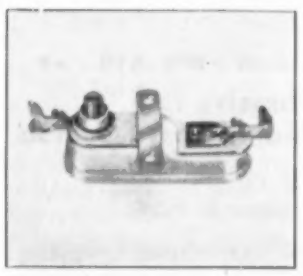
An access door hinged into the side of the duct section is now available to order in the company's line of duct mounted ventilating fans. Fan sizes range from 12 to 48 in. in diameter. Air handling capacity is 900 to 38,000 cfm.

The shaft is mounted on factory lubricated permanently sealed ball bearings inside a vapor tight belt drive enclosure that carries the belts through the duct housing to the bracket mounted motor on the outside. Sheave diameters can be selected to provide a speed best suited for each installation. The fan blades are made of cast aluminum. The duct section is flanged.

If you write maker identify as IEN - 425

THERMOSTAT . . For surface mounting, 1 amp. on 110 volt ac., to 400 deg. F.

Source: GEORGE ULANET CO.
411-15 Market St., Newark 5, N. J.



Actual size is shown

Overall length of this new miniature Model-13 thermostat is one inch. Width is about ⅝ inch. Height is ¼ inch. The temperature sensitive element is totally enclosed and designed for severe duty. Strain relief construction protects the bimetal. Operating point is set by turning a self-locking screw. A clamp strap, across the center of the housing, takes two screws for application on a face. Terminal lugs are provided at the two ends. The unit can be specified with the contacts normally open or closed.

Identify as IEN - 426

If you make any use, or might, of cemented carbides for cutting tools, press tools, woodworking tools, we suggest that you ask the Carboloy Department of General Electric for a copy of "The Carboloy Customer Training Program."

There you can read the very interesting story of the help this company has given some 5,400 men and women in supervisory positions, from some 1,400 companies, with its five day training course in its plant in Detroit. The course is free and your only expenses are transportation to and from Detroit with living expenses in Detroit. This is further simplified through space reserved by the company at the Hotel Fort Shelby with rates at $5 to $9 per day, single with bath, and through the transportation that Carboloy provides to pick you up in the morning and return you in the evening.

The company recommends the course for tool supervisors, tool room foremen and men in charge of carbide tools of all types. Ask for a copy of the book and read about it yourself.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 427

CONTINENTAL AIR FILTERS, Inc. STANDARDIZES WITH OHIO STOCK GEARS AND REDUCERS

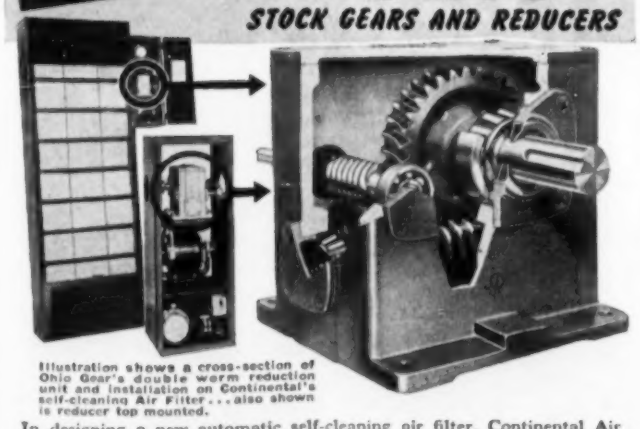


Illustration shows a cross-section of Ohio Gear's double worm reduction unit and installation on Continental's self-cleaning Air Filter . . . also shown is reducer top mounted.

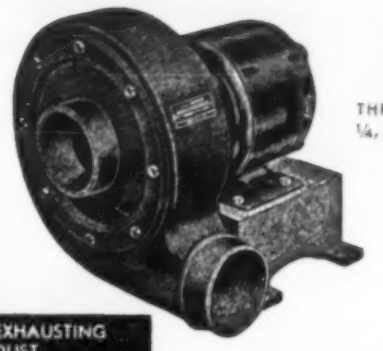
In designing a new automatic self-cleaning air filter, Continental Air Filters, Inc. of Louisville, Ky., gave careful consideration to the known short-comings of existing automatic filters. Continental made exhaustive studies of all accessories to the filter, and for reasons of sound engineering design, dependable and accurate performance, reputation and physical impactness, an Ohio Gear reducer was chosen. Just as industry depends on Continental Air Filter for the important function of keeping the air clean, so does Continental depend on Ohio Gear for accurate and consistent performance of their unit. This was an important factor in the largest installation of automatic self-cleaning filters under roof, the Ford Motor Company's Foundry at Cleveland, Ohio. Continental considers the dependable operation of Ohio Gear reducers partially responsible for its success. Perhaps Ohio Gear can serve you as well. Get in touch with their nearest distributor or write direct.

ESTABLISHED 1915
THE OHIO GEAR COMPANY
1345 EAST 179TH STREET • CLEVELAND 10, OHIO

OHIO GEARS

If you write maker identify as IEN - 428

THE Sutton MOTOR DRIVEN PRESSURE BLOWER



THREE SIZES ¼, ½, 1 H.P.

USE FOR
- EXHAUSTING
- DUST
- SMOKE
- FUMES
- VAPOR
- FORGE BLASTING

CONVEYING COTTON, WOOL, SHAVINGS
COOLING AND DRYING

MADE OF LIGHTWEIGHT CAST ALUMINUM ALLOY, CENTRIFUGAL TYPE. Direction of discharge may be changed to any of eight 45 degree positions. Straight wall construction reduces windage and increases efficiency. Standard 3450 r.p.m. direct-connected 60-cycle ball bearing motor, open or totally enclosed types. Capacities, 100 to 800 cu. ft. per min. at static pressures from ½" to 6".

Write for LITERATURE AND PRICES

Sutton *Manufacturing Corp.*
126 W. WILSON AVENUE NORFOLK, VIRGINIA

If you write maker identify as IEN - 429

Immediate Delivery

Buy Direct from the Manufacturer and Save

Francis EST. 1880. **FACTORY-MILL & WAREHOUSE TRUCKS**

Cutting Handling Costs since 1880

WRITE *TODAY for catalog and prices*

3000-lb capacity

Complete Line — For every use. Standard sizes 27" x 48" and 30" x 54" in stock ready for immediate shipment.

Need more good trucks quick? Buy direct from the manufacturer and save —time AND money. Francis heavy duty, economical trucks feature strong iron work —hardwood frame—rigid construction. All carefully machine fitted. Steel rims or rubber tires.

Manufactured by
HOOSIER FENCE CO. Inc.
Dept. IEN 1701 E. 38th St., Indianapolis, Ind.

If you write maker identify as IEN - 430

POPULAR PRICED GLOSSMETER

• New Uniformity • Greater Accuracy

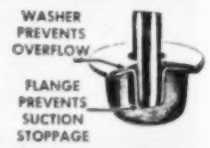
GARDNER GLOSSMETER

- DIRECT READING
- LIGHT WEIGHT
- CONSTANT VOLTAGE POWER SUPPLY

With a sensitivity of two scale units, accurate measurements are simple and quick. Complete mastery of Gardner Glossmeter is accomplished with easy to read instructions. Convenient size and weight for field, factory or laboratory use. Price $185.00. Write for Bulletin.

NEW ALL-METAL STRAINER NOW AVAILABLE

Strainer Unit.
Spray gun strainer
Send for leaflet.
Distributors wanted.

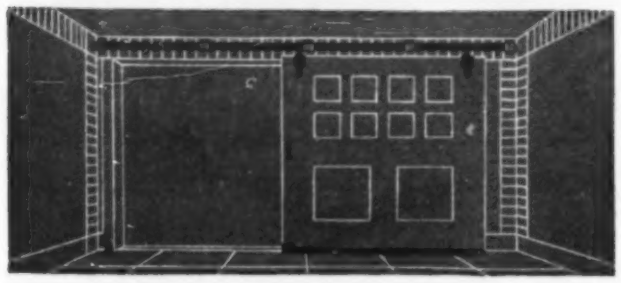


GARDNER LABORATORY, INC.
BETHESDA 14 • Dept. E • MARYLAND

If you write maker identify as IEN - 431

COBURN

SLIDING DOOR HARDWARE



- . . . LOW INSTALLATION COST
- . . . SMOOTH, EASY OPERATION
- . . . LONG, TROUBLE-FREE LIFE
- . . . ADAPTABLE FOR BOTH NEW AND REMODELING JOBS

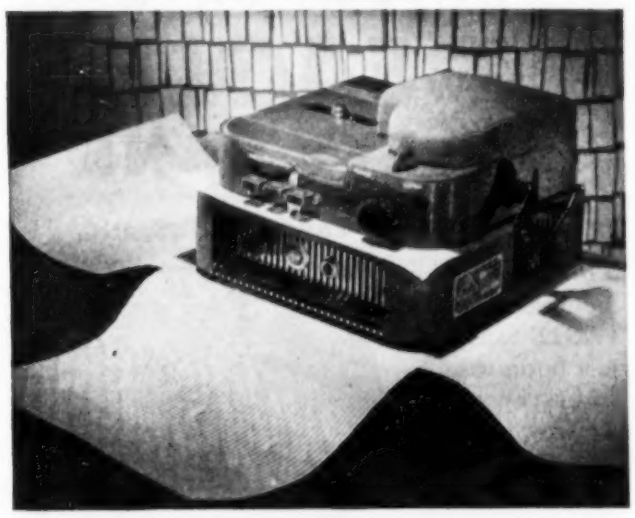
Sliding door hardware for industrial applications of all types: Straight-sliding, sliding-folding, around-the-corner, roundhouse and fire doors.

For additional information write to Sales & Engineering, 56 Sterling St., Clinton, Mass. or consult your classified telephone directory.

THE COLORADO FUEL & IRON CORPORATION—Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION—Oakland, California
WICKWIRE SPENCER STEEL DIVISION—Clinton, Massachusetts

COBURN PRODUCTS
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL & IRON CORPORATION
CF&I

If you write maker identify as IEN - 432



Custom Protection

prevents shipping damage
as no other packaging method known!

The Gray Manufacturing Company's efficient handling of their Audograph package is typical of the outstanding results obtained by leading manufacturers everywhere who now use Kimberly-Clark INTERIOR PACKAGING—KIMPAK*. In most cases this change to *custom protection* brought about faster, more streamlined packaging operations—and an end to product damage in shipment.

KIMPAK, available in rolls, sheets or pads, is soft, grit-free and easy to apply as wrapping paper. It will absorb up to 16 times its own weight in moisture within 30 seconds—protect against shock, scratching, pressmarking and vibration. Whether you package furniture, flowers or appliances—pharmaceuticals, confections or electrical parts—KIMPAK can be "tailored" to fit your particular needs, especially in finish protection. Furthermore, KIMPAK keeps your package clean and attractive—eliminates the disorder common with loose-fill substitutes.

Today—investigate *custom protection* with KIMPAK. For information, write Dept. **P-13**, Kimberly-Clark Corporation, Neenah, Wis.

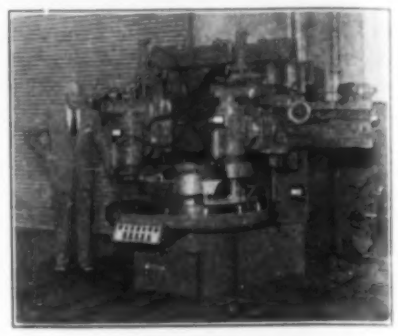
KIMPAK INTERIOR PACKAGING
A Product of **Kimberly-Clark**

*T. M. REG. U. S. & FOREIGN COUNTRIES

If you write maker identify as IEN - 434

GRINDING . . Double head machine for precision work on rings and races

Source: KAYDON ENGINEERING CORP.
928-32 W. Sherman Blvd., Muskegon, Mich.



Readings in millionths

Series 1800 is new design in the company's line of precision double head grinding machines in which two grinding wheels can be applied singly or in unison on ring type work mounted on the table. Four table sizes rate from 30 to 48 inches. Maximum swing in each case is 56 in. and height under the rail is 24 inches. The machine is in production at the company's Frauenthal Division.

Each assembly is tested upon completion to assure its ability to grind work with a maximum of 0.0002 in. variation in wall thickness and within the same dimension for face parallelism. The first in the new series is in operation grinding cupola bearings for the new Patton medium tank.

The table is mounted on a flanged vertical spindle supported in double row tapered and double row straight roller bearings. Both bearings are pre-loaded. Drive is by a 3-hp. variable speed motor with worm and gear connection to the table for a range of table speeds between 5 and 30 rpm.

Each wheel spindle is driven by a 5-hp. direct connected 1,800-rpm. motor. The spindles take 12-in. grinding wheels. Maximum distance between the center line of the right hand and left hand heads is 60 inches. Normal distance for the wheel spindle center line to pass the center line of the table is 6 inches.

Controls center at hand wheels for the horizontal and vertical feeds. Oscillation horizontally and vertically is by hydraulic cylinders. They can be set for either automatic, manual or a combination of the two actions. Adjustable stops control the length of stroke and reverse the direction of travel. A valve adjustment controls oscillating speed. Vertical hydraulic stroke ranges from 1¼ to 8 inches.

Range covered by the vertical actuator is any 8-in. cycle within the maximum 12 in. of vertical travel. Corresponding range covered by the horizontal actuator is any 24-in. cycle within the 40 in. of vertical range. The machine occupies a floor space measuring 10 by 7 feet. It weighs 18,500 pounds.

If you write maker identify as IEN - 435

CORROSION PROOFING . . Additive for wash water following abrading

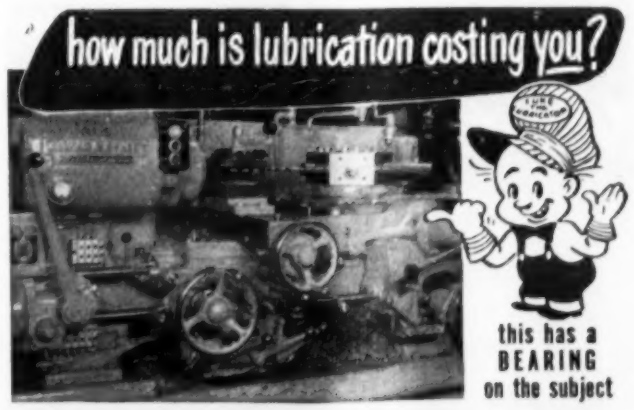
Source: AMERICAN WHEELABRATOR & EQUIPMENT CORP.
1119 S. Byrkit St., Mishawaka, Ind.

Forms film that retards corrosion

Anarust trade names a new organic composition soluble in hard or soft water. It produces a clear colorless solution that is odorless, non-irritating to the skin and not subject to bacterial decomposition. It will not foam when put in solution and keeps water staining to a minimum on ferrous parts that are rinsed in it following a wet abrading operation. Specific gravity is about 1 at 20 deg. C. The material is designed for addition at the rate of about ½ oz. per gal. of water.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 436



You may have 12 bearings to lubricate on your particular machinery, or you may have 12,000. The number isn't so important. If you are lubricating by hand, it's costing you money which can be saved with Trabon Automatic Lubrication Systems.

And remember, too:
Trabon is the only system having a single indicator at the pump, to quickly and positively show that all bearings are getting proper oil or grease.

A Trabon automatic system can be buried in dirt, steam or ice.
Use it on large or small machines, in heat, vibration, out in the open or inside.
Get your bearings on a Trabon system. Trabon Automatic Lubrication Fits Any Bearing Situation.

Write for Bulletin 529.

Trabon ENGINEERING CORPORATION
1814 E. 40th STREET • CLEVELAND 3, OHIO
Oil and Grease Systems

If you write maker identify as IEN - 437

Problem:

LABOR COST IS UP

MATERIAL COST IS UP

SELLING PRICES REMAIN

ANSWER

Your machines plus precision timers made by Eagle.

Eagle "know how" engineers, (without obligation), will study your individual process and suggest the right timer to improve the quality and speed-up production of your product. You can save countless man-hours for greater profit with Eagle automatic timing or counting.

A TIMER FOR EVERY TIMING PROBLEM

EAGLE SIGNAL *Industrial Timers*
EAGLE SIGNAL CORPORATION · MOLINE, ILL.

Send for general bulletin 340, today.

If you write maker identify as IEN - 438

Fire-Fighting Equipment

Triple-Action Nozzle Discharges Water Three Different Ways To Cut Fire Losses

Rockwood SG-48 Nozzle discharges high-velocity WaterFOG, straight water stream or low-velocity WaterFOG . . . to help you put out fires faster in ordinary combustibles and flammable liquids.

Made of light-weight aluminum alloy, it's as easy to handle as it is versatile. It comes in ¾", 1", 1½", and 2½" sizes to give you a choice of the following discharge ranges at 100 p.s.i. at the nozzle:

High-Velocity WaterFOG . . 20 to 30 feet
Straight Water Stream . . . 50 to 100 feet
Low-Velocity WaterFOG (through extension applicator) 10' to 22' diameter

Bulletin C501 gives you the whole story on Rockwood SG-48 Light-Weight Triple Action WaterFOG Nozzles. Write for your free copy today.

ROCKWOOD

ROCKWOOD SPRINKLER CO.
Engineers Water . . . to Cut Fire Losses
40 HARLOW STREET, WORCESTER 5, MASS.

If you write maker identify as IEN - 439

QUALITY DRI-SEAL PIPE PLUGS

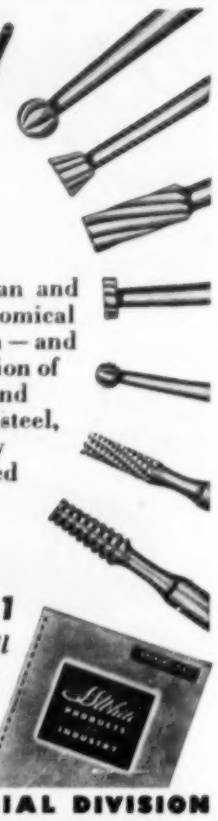
A dependable source for Dri-Seal Pipe plugs. Most sizes shipped from stock. Prices available on any size or quantity.

Write to . . .

LISLE *Corporation*
CLARINDA, IOWA
Makers of LISLE Magnetic Plugs

If you write maker identify as IEN - 440

Your Best Buy in Burs!



S.S.WHITE BURS cut fast, clean and cool and give long-lasting economical service. Cutting edges are keen — and stay sharp. There's a full selection of sizes and shapes of chromed, and carbide burs for cutting brass, steel, wood, hard rubber, bone or any other material that can be bored or milled by sharp-edged hardened steel tools.

WRITE TODAY for 50-page Catalog T-51

It completely describes the full line of S.S. White flexible shaft tools and other industrial products.

THE S.S.White INDUSTRIAL DIVISION
DENTAL MFG. CO. Dept. N, 10 East 40th St. NEW YORK 16 • N. Y.

WESTERN DISTRICT OFFICE: Times Bldg., Long Beach, Calif.

If you write maker identify as IEN - 441

around the world, it's

HOOVER BALLS

made of

CHROME STEEL • CARBON STEEL • STAINLESS STEEL BRASS • BRONZE AND MONEL METAL

"America's Foremost Ball Manufacturer"

HOOVER BALL and BEARING CO.
Ann Arbor, Michigan

If you write maker identify as IEN - 442

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

$2 each

gives up to 2000 readings

it's this simple:
- Select the Tempilstik° for your working temperature.
- Mark your workpiece with it.
- The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

TEMPIL CORPORATION
11 West 25th St., New York 10, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy" —16½" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

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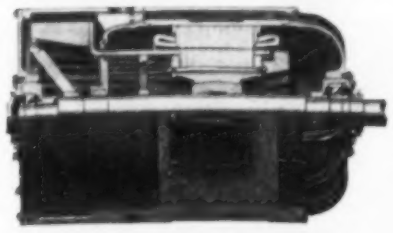
COMPANY _____
ADDRESS _____

If you write maker identify as IEN - 443

MOTOR . . Enclosed induction unit for drives that are hard to start

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



Weight down 40 per cent

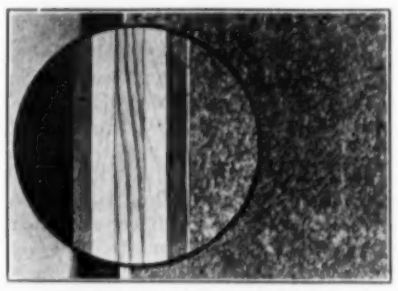
Rating is 30 to 150 hp. and speeds are 900 and 1,200 rpm. for this new Type-KRX totally enclosed induction motor. It is available for 220, 440 and 550-volt circuits. The design is characterized by the extended low resistance rotor bars. They permit reduction in size as much as 30 per cent compared to the company's previously developed similar motors for High-Slip duty. Slip range is 5 to 8 per cent at 900 rpm. It is 8 to 13 per cent at 1,200 rpm.

The extended low resistance bars pass through a rotating baffle plate beyond which they are brazed to strips of high resistance metal shaped to form a radial blade fan. The fan blades themselves provide the high rotor resistance necessary for high slip characteristics. Most of the rotor heat develops where there is direct transfer to the cooling air outside the main motor enclosure. Standard construction includes sealed ball bearings in cast iron end housings.

If you write maker identify as IEN - 444

HARDBOARD . . For product use and construction, 4 by 8 ft. panels

Source: MASONITE CORP.
109-13 W. Washington St., Chicago 2, Ill.



Can be shaped, nailed

Presdply trade names a new laminated panel with faces of Presdwood over a plywood core. Two grades are available. One has faces of standard Duolox or Tempered Presdwood for interior applications. The other has faces of Tempered Presdwood for exterior uses. Three thicknesses are ½, ⅝ and ¾ inch. The surfaces are hard, smooth, wear and moisture resistant.

The panel can be painted, the grainless surface taking paint, enamel, lacquer, shellac or varnish. It can be cut with woodworking tools. The plywood base will hold screws. Typical applications are in cabinet doors, work surfaces, signs, fixture shelving, partitions, underlayment for plastic, material handling chutes and pallets.

Identify as IEN - 445

Ask for a copy of "The Stopping Story" if you want to read about an interesting new development in automotive brakes in which the braking surface has been moved from the brake rim in the flange with many attendant advantages. The story concerns the new Ausco Lambert self-energized double disc brake of Auto Specialties.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 446

5 MINUTE SHOP COAT at ⅓¢ per sq. ft.

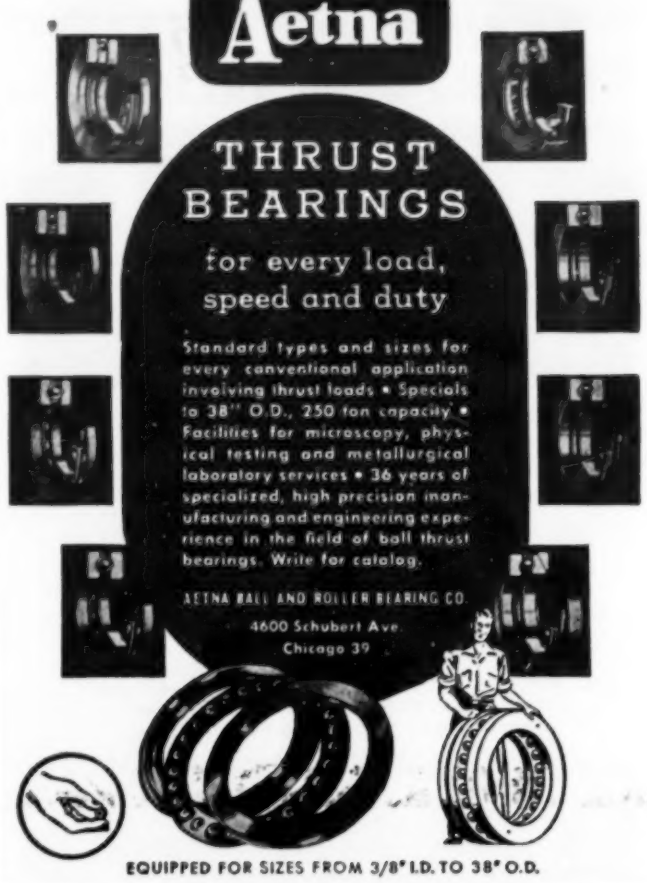
Link-Belt Co., Philadelphia, protects its product with ROSKOTE Black Shop Coat.

ROSKOTE SHOP COAT dries to a non-tacky film in less than five minutes. It resists corrosion from acids, alkalies and moisture during shipment and storage for 9 to 18 months, depending upon atmospheric conditions. The dried film presents a clean, glossy appearance and will not pick up dust from surrounding contacts. ROSKOTE Shop Coat contains a resin base derived from Roskote, a pyrobituminous organosol. It is supplied in non-pigmented black, or in red, olive drab and aluminum. ROSKOTE may be applied by brush, spray or dip-tank. ROSKOTE covers 600 to 900 square feet per gallon, with the additional important economy of quick handling and removal of the coated part, thus saving valuable time and floor space. ROSKOTE Shop Coat has been approved by the American Iron and Steel Institute, under its JEx Thin Coat Series for Export Shipment. Write for complete information, specifications and prices.

ROYSTON LABORATORIES, INC.
P. O. Box 112, Blawnox, Pa.

If you write maker identify as IEN - 447

Aetna



THRUST BEARINGS

for every load, speed and duty

Standard types and sizes for every conventional application involving thrust loads • Specials to 38" O.D., 250 ton capacity • Facilities for microscopy, physical testing and metallurgical laboratory services • 36 years of specialized, high precision manufacturing and engineering experience in the field of ball thrust bearings. Write for catalog.

AETNA BALL AND ROLLER BEARING CO.
4600 Schubert Ave.
Chicago 39

EQUIPPED FOR SIZES FROM 3/8" I.D. TO 38" O.D.

If you write maker identify as IEN - 448

Announcing THE NEW EAGLE SAFETY CANS

LISTED AND LABELED BY
UNDERWRITERS' LABORATORIES, INC.

This brand new, modernly designed EAGLE Safety Can is a boon to every industry where flammable liquids must be handled, transported and stored.

EXCLUSIVE EAGLE FEATURES:

1. Guard Cap—protects and seals the valve cap—eliminates spilling.
2. Breast and Body Welded together electrically under electronic control.
3. Reinforcing Bottom Band of 16-gauge steel—for *extra strength.*
4. Cam-Acting Connecting Arm—tightens seal on pouring spout if can is upset or bumped . . . prevents spilling or leakage.
5. Combination Free-Swing Carry and Operating Handle—Lies flat, out-of-way when not in use. To pour, engage handle notch and press down.

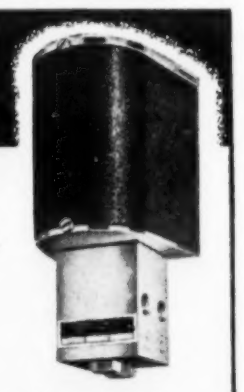
Three sizes available: UI-50—5 gal. cap., UI-25—2½ gal. cap., UI-10—1 gal. cap.

ORDER NOW *from your nearest distributor or write manufacturer for further details.*

EAGLE MANUFACTURING COMPANY • Wellsburg, West Va.

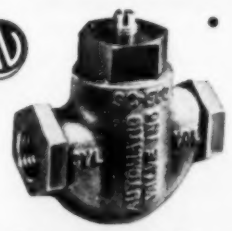
If you write maker identify as IEN - 449

Solenoid VALVES



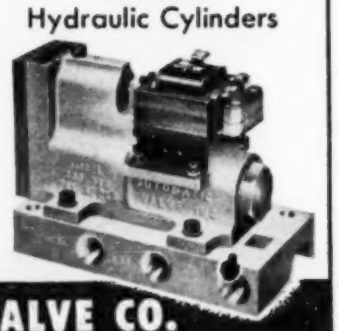
PILOT VALVES
3-WAY 4-WAY
For operating Master Valves and Small Cylinders

• • •



***Speed Control* VALVE**
Controls speed of Air and Hydraulic Cylinders

***3-Way and 4-Way* VALVES**
Pilot Operated
Sizes ¼" — ⅜" ½" and ¾"
Write for Bulletin



AUTOMATIC VALVE CO.
37427 GRAND RIVER AVE., FARMINGTON, MICH.

If you write maker identify as IEN - 450

Keep your plant cleaner with

INVINCIBLE VACUUM CLEANERS

Invincible Light, Portable—1½ H. P

These Invincible features insure outstanding performance: 1. Multi-stage turbines produce plenty of power. 2. Positive Separation precedes vacuum producer. 3. Reach *every* surface with attachment tools. 4. Also recover scores of industrial materials. 5. Compact, portable; no interference with production. 6. 15 models from ½ to 5 H.P. 7. Larger models can be operated continuously. 8. No dirt or abrasives ever touch moving parts . . . *Over 100,000 Invincibles in use—5,000 for over 25 years. Send for free bulletin.*

INVINCIBLE VACUUM CLEANER MFG. CO.
DOVER, OHIO

If you write maker identify as IEN - 451

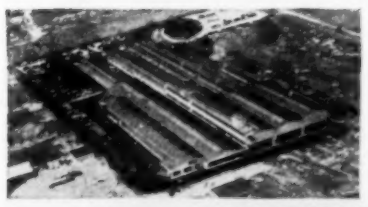
LET RIVERSIDE *help solve your* **CASTING PROBLEMS**

Riverside Foundry is ready to give you excellent service on cast armor and all types of QQS 681-B materials. In fact, any steel casting specifications for which your contract might call. We have a full staff of men who have spent years producing ordnance material.

Our customers include many great names of American Industry: Chrysler, American Locomotive, International Harvester, Fisher Body and Ford Motor Company. Ask them about Riverside.

Call or write us at Riverside today.

For a dependable qualified source of steel casting requirements, see Riverside. You give us your drawings. The rest of the job is ours. Save yourself time, worry and loss of production. We are ready to do a complete job for you on any casting requirement.



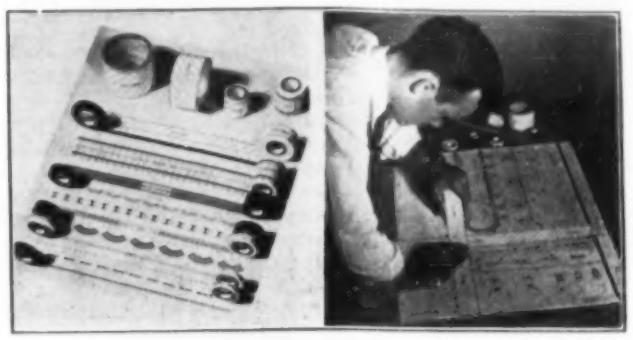
The big modern Riverside Foundry at Bettendorf, Iowa has the best equipment to do the best job.

IOWA'S LARGEST INDEPENDENT FOUNDRY
Riverside Foundry
Bettendorf, Iowa

If you write maker identify as IEN - 453

LAYOUT . . Self-adhesive tape in printed patterns for plant layout

Source: LABELON TAPE CO.
P. O. Box 1212-A, Rochester 3, N. Y.



Minimizes drafting and assists in revision

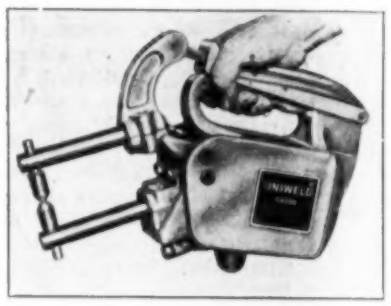
Preprinted standard symbols for aisles, center lines, columns, conveyors, monorails, service lines, shafts, stairways, tracks and sidings are available on self-adhesive tape in this recent addition to the company's line. Scale is ¼ in. to the foot. Rolls are supplied in 324 or 648-in. lengths in both opaque and transparent types. The former is used for photocopy, the latter for reproduction with standard ammonia vapor printing equipment.

The tapes are made of acetate plastic and are wound on cardboard cores. They are wrapped in foil and packaged in separate boxes. A representative selection of 15 symbols and 20 different rolls is supplied in a kit including a cutting knife and instructions. Selection also can be made from the complete list of 45 symbols, colors and types.

If you write maker identify as IEN - 454

WELDING . . Portable spot machine weighs 25 lb., rates ⅛ in. in steel

Source: WELDING SERVICE & SUPPLY CO.
1830 S. Cicero Ave., Cicero 50, Ill.



Self-contained

Model 275 is a new 220-volt 60-cycle single phase spot welding machine in the company's Uniweld line. It is equipped with a 10-ft. flexible power line and ground wire and with 7½-in. arms in which the welding tips are assembled. Pressing down on the handle closes the tips on the two sides of the work and actuates the welding circuit.

The machine will handle spot welds in mild steel to a combined thickness of ⅛ inch. Heat is confined to a small area to minimize any tendency to warp or buckle in the metal being welded. The welding tips are connected directly to the transformer through the solid copper arms.

The housing is made of aluminum. A thumb screw adjustment sets the tips for varying metal thickness and pressure exerted through the toggle action. Rubber feet on the bottom of the housing permit the unit to stand upright. Rating is 1.25 kva. on 50 per cent duty cycle. List price is $125.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 455

400,000 VOLTS FOR RENT

Attention aluminum casting buyers: X-ray examination of important castings offers big advantages. 1.) It eliminates costly rejects due to hidden flaws discovered only after machining. 2.) It adds new dependability to vital parts. 3.) It gives your sales department a valuable new sales feature.

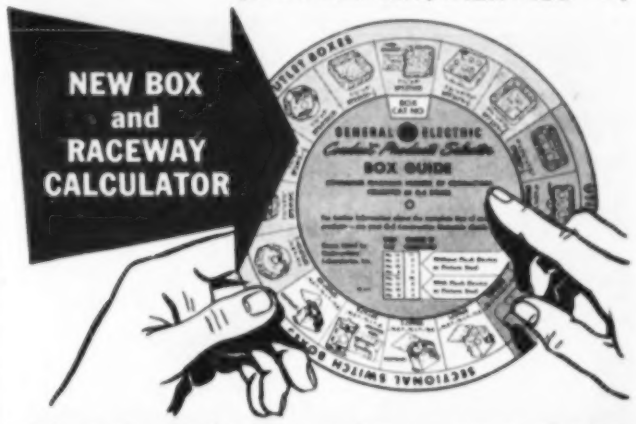
Check into the remarkable pattern, foundry, engineering, and tool room facilities at Acme Aluminum Alloys, Inc. 220,000 and 400,000 volt X-ray equipment available for radiographic inspection.

Write for facilities bulletin

Acme ALUMINUM ALLOYS, INC.
225 N. FINDLAY ST., DAYTON 3, OHIO

If you write maker identify as IEN - 456

NEW BOX and RACEWAY CALCULATOR



Select the Right Size and Type AT A GLANCE

Here, at last, is an easy way to select conduit sizes and box types for the commonly used building-wire sizes.

One side is a handy raceway calculator. It helps you determine raceway sizes for use with rubber, thermoplastic, or lead-covered conductors. The other side is an easy-to-use box guide which determines maximum number of conductors permitted in various box types.

This G-E Conduit Products Selector is available through your General Electric Construction and Materials Distributor. Section C1-142, Construction Materials Department, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—
GENERAL ELECTRIC

If you write maker identify as IEN - 457

positive safety!

INSTANT SWITCHING ACTION with wheelco flame-otrol

MODEL 1300

FOR ALL TYPES OF OIL FIRED BURNERS

To protect your oil fired equipment from combustion failure the Wheelco Flame-otrol has been engineered with instantaneous safety shut-off action. Response to any unsafe condition is immediate and sure. Safe-start is guaranteed . . . whether following a cold start, temperature or limit control action, flame or power failure. Resumption of fuel flow is allowed only when ignition is assured. An automatic proving period checks electronic and sensing circuits for any defect that might cause hazardous operation. Approved by the Associated Factory Mutual Laboratories and Underwriter's Laboratories.

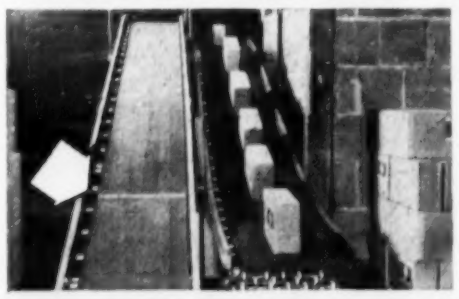
WRITE FOR FLAME-OTROL BULLETIN F-3

wheelco instruments division
BARBER-COLMAN COMPANY
1204 ROCK ST. • ROCKFORD, ILLINOIS, U.S.A.

If you write maker identify as IEN - 458

ALLIGATOR

CONVEYOR BELT LACING



*Every Tooth A Vise**

in Long Continuous Lengths for Conveyor Belts . . . . .

- ★ Excellent for Package Conveyors, Portable Loaders, Trenching and Ditching Machines, etc.
- ★ In canneries where corrosion or rust is a problem specify Alligator made of Stainless or Monel.
- ★ For magnetic separators or anti-sparking specify Alligator made of Everdur.
- ★ Separable and smooth on both sides.
- ★ 12 sizes. For belts from 1/16" to 5/8" thick—and *any width.*

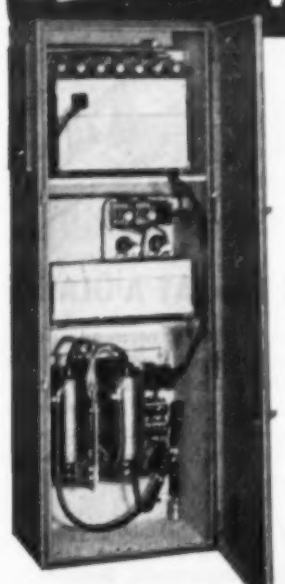
Order from Your Supply House. Ask for Bulletin A-60.

FLEXIBLE STEEL LACING CO. 4610 Lexington St., Chicago 44, Ill.

JUST A HAMMER TO APPLY IT

If you write maker identify as IEN - 459

Simplified Precision Welder Control



- Greatly Simplified Circuits
- Timing Accuracy Assured
- Easy Inspection and Maintenance

APPLICATION: for welding stainless steel, nonferrous metals, and other critical spot welding jobs requiring electronic synchronous-precision control. (Available with current wave shape control auxiliaries for aluminum or alloy metals.)

at left • Class 8993 NEMA Type S2H Synchronous-Precision Controller available with 600 or 1200 frame contactor. Can be arranged either for side of machine or wall mounting.

Write for Bulletin 8993 Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY

If you write maker identify as IEN - 460

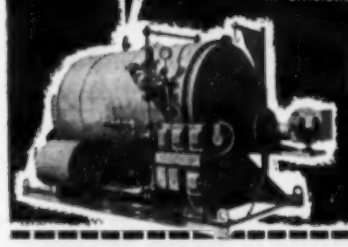
PLENTY OF STEAM! with MUND PACKAGED STEAM® BOILERS

Stress Relieved before Shipment · Fully Automatic Controls Guaranteed · Overload Capacity for Long Life · Complete Accessibility · Fast Firing · Easily Cleaned · Immediately Available · Gas or Oil Fired · 1½-50 H.P.* · Completely Packaged

Plenty of steam where and when you want it! That's the answer when you install Mund "PACKAGED STEAM" boilers. And... they are immediately available from our strategically located warehouses throughout the country. 1½—50 H.P.* Mund inclined water-tube, Scotch-Mund fire-tube, and other type units. No brickwork required. Insulated. Efficient. A.S.M.E. construction. You'll like the way factory-trained service-jobbers provide *quick installation*... and help you to maintain *continuous operating efficiency*. Why not fill in the coupon now?

Need Help? Send Coupon!

*Mund manufactures a complete line of boilers for industry with ratings up to 350 H.P. Scotch-Mund 3-Pass Boiler illustrated exceeded 80% in efficiency tests.



MUND BOILERS INC. DALLAS, Texas LOS ANGELES, Calif.

MUND Boilers, Inc.
1600 N. Indiana St., Los Angeles 63, California
☐ Please send your representative around to discuss our boiler problem (no obligation).
☐ Please send me your catalog information.
I am interested in-a _____ type boiler of _____ H.P. ☐ Oil fired ☐ Gas fired

Name _____
Address _____
City _____ State _____

If you write maker identify as IEN - 462

BEARING . . Ball design with self-aligning ring on outer race

Source: FAFNIR BEARING CO.
35-39 Booth St., New Britain, Conn.

Series KP-BS

Illustrated in half section is the company's new adaptation of the AN202 KP-B Type control bearing. It is known as Type KP-BS and has been designed to accommodate structural deflections, manufacturing errors, differential expansion and contraction that occur in high speed aircraft. Feature is a self-aligning outer ring that rides a spherical surface on the outer race.

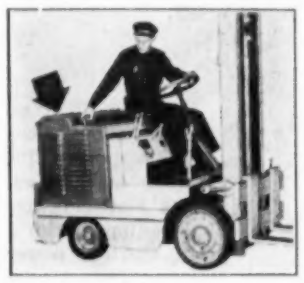
The new unit provides the same capacity as the rigid Type KP-B. The close fit between the outer race and the self-aligning ring assures rigidity in the mounting. There are no assembly slots and so the self-aligning ring provides uninterrupted surface contact with the bearing outer race.

Eight sizes range from 1.3130 to 3.0630 inches in the bore and from 2.250 to 4.250 in outside diameter. Width of the inner ring is 0.437 in six of the sizes and 0.531 in. in the other two. Corresponding width of the outer ring is 0.375 and 0.469 inches. Maximum static rating in radial load is 5,400 to 15,200 pounds. Corresponding thrust is 4,400 to 12,100 pounds. Each assembly includes the company's Plya-Seal to keep out dirt and retain the factory applied lubricant.

If you write maker identify as IEN - 463

GENERATOR . . Diesel electric unit replaces battery on electric truck

Source: READY-POWER CO.
3828 Grand River Ave., Detroit 8, Mich.



Self-contained power

The company has added a new engine generator power unit for use on electrically driven trucks in which the engine is a diesel designed for continuous duty. The generator provides current for trucks in a range from 2 to 5-ton capacity. The new assembly is known as Model N. It applies on the truck in the same space as that occupied by the battery compartment. It is complete with a fuel tank and starting battery and equipment.

The unit can be purchased to convert present battery powered trucks and can be specified as equipment supplied new by the truck manufacturers. Controls on the housing provide for starting, stopping and for throttling the engine.

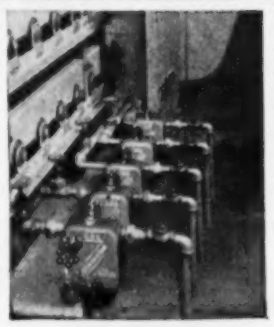
Identify as IEN - 464

American Ordnance Association is a nation wide society of American citizens pledged to national security and peace through preparedness in cooperation with the Armed Forces. The society has published a brochure covering its organization and activities. It tells how you can become a member or help the work along in other ways.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 465

In MODERN Steam Traps, too



Gadgeteering is a thing of the Past

A noteworthy example of improvement through simplification in steam specialties is to be found in Drainator — the modern steam trap.

All gadgets such as floats, valves, levers, etc., have been eliminated. The flow of condensate and non-condensable gases is ingeniously controlled by the thermodynamic properties of the condensate.

Elimination of these parts which cause breakdowns and necessitate repairs assures continuous operation at high efficiency and low cost.

Write for literature.

The COE MANUFACTURING CO.
504 BANK ST. PAINESVILLE, OHIO

If you write maker identify as IEN - 466

LIFTS and PULLS at ANY angle . . .

Move machinery, pull boiler tubes, join belts, set pipe, lift motors—for 1001 uses pick up a

CM PULLER

¾ TON MODEL WEIGHS ONLY 13 LBS.

- Operated by a ratchet handle requiring no more effort than an automobile jack. Objects up to 12,000 lbs. can be lifted or pulled ...vertically, horizontally or at any angle. Anyone can operate. Automatic brake holds loads at any point. Inexpensive. Sturdy. Safe. Herc-Alloy flexible welded load chain.

Send for PULLER Bulletin 146 Illustrated and with prices.

Capacities: ¾ to 6 ton

CHISHOLM-MOORE HOIST CORPORATION
(Affiliated with Columbus McKinnon Chain Corporation)
GENERAL OFFICES AND FACTORIES: TONAWANDA, N. Y.
SALES OFFICES: New York • Chicago • Cleveland

If you write maker identify as IEN - 467

PRECISION VERNIER CALIPERS
Accurate Dependable

6" size

A tool to comply with the most exacting demands. Made by the leading European precision tool craftsmen. Measures inside, outside, thread and depth.

The following models have the famous M•Z•B cam lock which guarantees fixed and never shifting setting when pressure on lock is released.

#30-61	Chrome Steel	.001" & 1/128"	$14.00
#30-64	Chrome Steel	.001" & 1/20 mm	$14.00
#30-62	Stainless Steel	.001" & 1/128"	$16.50
#30-65	Stainless Steel	.001" & 1/20 mm	$16.50
With set screw			
#30-78	Chrome Steel	.001" & 1/20 mm	$9.75

Total length of above models 8". Scale 6".
12" Calipers and Height Gauges also available.
Leather cases supplied free of charge with each caliper.

MICROMETERS

M•Z•B Micrometers 1" size to read .0001" with hardened threads, stop-nut and ratchet comparable to the best only $15.00. Made by the men who made precision tools famous with the "know-how" and experience that produced hundreds of thousands of the finest calipers and micrometers ever sold.

Send for our latest literature giving detailed information on these precision tools.

We also import fine precision pliers—send for information

INTER-CONTINENTAL TRADING CORP. 90 WEST STREET NEW YORK 6, N. Y.

If you write maker identify as IEN - 468

3 sound reasons FOR INSISTING ON A-C WELDERS

Few welders available today give you all the features you will find combined in the new line of M&T a-c transformers. These features are:

1. Low open circuit voltage *with* arc stabilization—for greater safety and for a really stable arc free from "pop-outs."
2. Silicone insulation—the greatest contribution to welder design in years—stands up against higher temperatures—moisture resistant—proof against chemical fumes—permits more overloading—assures longer welder life.
3. *Automatic* "hot-start"—provides just the right amount of surge for easy arc starting at any current setting *without* manual adjustment of controls.

More sound reasons for using M&T A-C Welders are in the M&T bulletin giving operating data. Write for your copy.

Contact your local distributor or nearest M&T office.

METAL & THERMIT CORPORATION
100 EAST 42nd STREET • NEW YORK 17, N. Y.

If you write maker identify as IEN - 469

Manufacture your own Climate with Remington Climate Controllers

Remington Climate Controllers are paying for themselves day after day in laboratories, precision gauge rooms, sensitive chemical pilot plants and many other locations where close control of temperature and relative humidities is necessary.

The Climate Controller not only cools, but dehumidifies, filters and circulates the air; it ventilates, too. Optional heating is also available in this compact unit.

You save on installation costs. Air cooled models require no plumbing or drain connections; and should your process move, your Climate Controller moves with it.

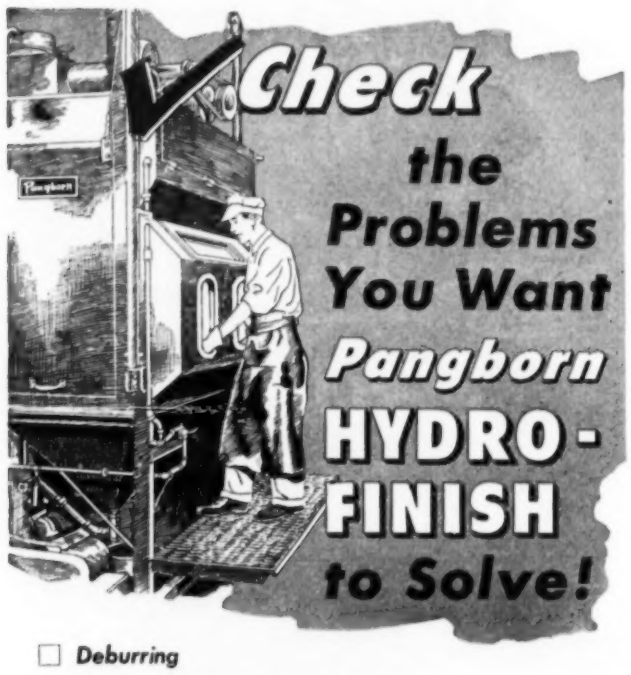
Remington Climate Controllers are recommended for temperatures from 50° to 95° F., relative humidities from 20% to 85%. Depending on conditions, a single unit can handle up to 6,000 cu. ft.—three units up to 24,000 cu. ft. Automatic controls available. For full information, write for Bulletin 103.

Where excess humidity is the major problem Remington "Moisture Magnet" Dehumidifiers will remove up to 266 pints of water daily. (Test conditions)

Remington AIR CONDITIONING

61-2 Willey Street — Auburn, New York

If you write maker identify as IEN - 470



- ☐ *Deburring*
- ☐ *Surface finishing, lubrication control*
- ☐ *Removing heat treat scale*
- ☐ *Preparing surfaces for electroplating*
- ☐ *Removing and blending grinding lines*
- ☐ *Finishing threaded sections for fit*
- ☐ *Improving die manufacturing and maintenance*
- ☐ *Improving cutting tool life and appearance*
- ☐ *General maintenance cleaning*

The amazing versatility of Hydro-Finish, Pangborn's modified form of impact blasting using an abrasive suspended in liquid, will solve these and other problems for you! By varying abrasive size and hardness, air pressure, distance from work, and ratio of liquid to abrasive, almost any type of precision finishing can be accomplished faster and better!

For example, with Hydro-Finish on your production line, surfaces hold electroplating better . . . paints, rubber and plastics are bonded better because Hydro-Finish forms a "tooth" on your work. Threaded pieces turn more easily. Dies are cleaned better, surfaces are improved, production is speeded, and tools last longer.

Get the facts! Write today for Bulletin 1400A and learn how Hydro-Finish can help you! Address: PANGBORN CORP., 2300 Pangborn Blvd., Hagerstown, Md.

Look to Pangborn for the latest developments in Blast Cleaning and Dust Control equipment

Pangborn

BLAST CLEANS CHEAPER with the right equipment for every job

If you write maker identify as IEN - 472

MELTING . . Petroleum gas furnace, portable design, handles lead, solder

Source: MUTUAL LIQUID GAS EQUIPMENT CO. 3606 W. Imperial Highway, Inglewood, Calif.

Plumbers like it

The cylinder forming the base of this new No. 2 furnace is filled with butane or propane gas and the burner is ignited. Within 12 min. it will melt a capacity load of lead in an 8-in. pot. The flame develops a temperature of approximately 2,350 deg. F.

The furnace takes a No. 11 or a No. 21 cylinder, both of which are built to ICC 4B 240 Code. They rate working pressure to 250 pounds. Both cylinders are fitted with filter valves, 375 lb. pressure vapor relief valves, fillers and liquid level gages. Capacities are 12 lb. and 21 lb. of propane gas. A bench model, also available, is known as No. 2-A. It is equipped with a 10-ft. hose that can be attached to a filler connection.

If you write maker identify as IEN - 473

MARKING . . Fungicidal ink for application on non-porous surfaces

Source: PHILLIPS PROCESS CO. 198 Mill St., Rochester 4, N. Y.

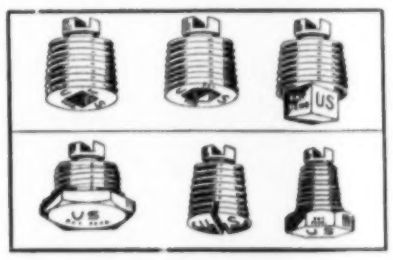
No protection is required

New ink has been developed for application by a rubber stamp and stamp pad and also for spraying or brushing to mark identification on metals, plastics, non-porous material where the surface is to be subject to high moisture conditions. The ink dries in about a minute. It is not necessary to cover it with a clear lacquer to protect against fungus attack.

If you write maker identify as IEN - 474

SEPARATING . . Magnetic drain plug attracts and holds ferrous particles

Source: MAGNETIC DRAIN PLUG CO. 10001 N. Main St., Wellington, Ohio



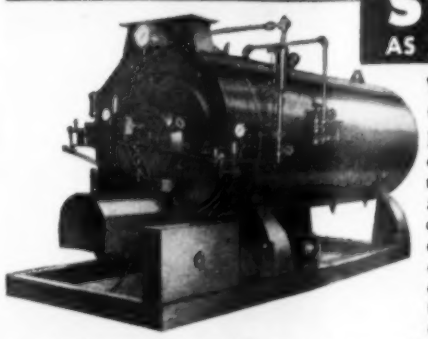
Six available types

New design in the company's line of magnetic plugs applies sintered Alnico providing approximately 530 grams pull. The new assembly also employs a hardened plated steel drive screw to attach the magnet to the plug body and the body carries Dryseal pipe threads. Sizes range from ⅛ to 2 in. for application in stationary and mobile equipment in the drain openings on oil filled housings and enclosures. The magnet attracts and holds ferrous particles so they can be wiped off whenever the plug is removed from the drain opening.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 475

REGARDLESS OF SIZE
CYCLOTHERM GIVES YOU . . . **STEAM** AS YOU NEED IT



with CYCLONIC COMBUSTION!

If your steam requirements have a tendency to change at different times of the day, the most economical and efficient boiler you can install is a Cyclotherm Steam Generator.

Cyclotherm means *Quick Steam* when called for. This reduces fuel consumption during "coming up" periods and permits continuous, quick adjustment to load changes. The Cyclotherm Boiler is able to deliver steam faster because of its extremely high heat transfer and the fact that it has much greater water circulation since the combustion chamber is radiating heat evenly along its entire length.

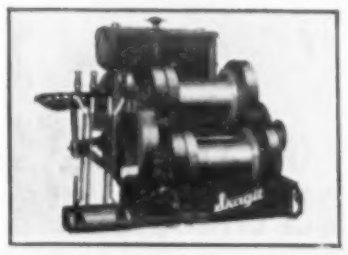
REMEMBER—Full power operation from a cold start in 15 to 20 minutes. Guaranteed 80% efficiency. Savings up to 50% on maintenance. Great fuel operational savings. Boilers are designed for oil or gas operations from 18 thru 500 h.p., 15 to 200 lbs. operating pressure.

Write today for latest descriptive folder, "All Your Questions Are Answered by Cyclotherm."

CYCLOTHERM STEAM GENERATORS
DIVISION UNITED STATES RADIATOR CORP.
DEPARTMENT 29, OSWEGO, NEW YORK

If you write maker identify as IEN - 476

Lift — Pull — Haul



Hold — Lower — Load

The Skagit Steel & Iron Works, SERIES "G" HOIST handles lumber or industrial loads easily, safely and with precision. ROCKFORD CLUTCHES contribute to the reliability and efficiency of this handy unit. Let ROCKFORD clutch engineers help your product designers lay out power transmission controls that will give your machines competitive advantages.

B-W ENGINEERING MAKES IT WORK
B-W PRODUCTION MAKES IT AVAILABLE
ENGINEERING BULLETIN SENT ON REQUEST

ROCKFORD CLUTCH DIVISION
303 Catherine Street, Rockford, Illinois, U. S. A.

ROCKFORD CLUTCHES

If you write maker identify as IEN - 477

CLANCY SURE-GRIP HOSE CLAMPS

- CAN BE REUSED
- HEAVY STEEL
- PERFECT CIRCLE

Clancy clamps grip evenly, hold any pressure the hose stands. Each part separately galvanized . . . no raw edges, won't rust. Sure-Grips keep their shape, can be removed and reused. For air, gas, water or steam. Every size to fit foreign or domestic hose. Write for prices.

J. R. CLANCY INC.
1000 W. Belden Ave.
SYRACUSE 4, N. Y.

If you write maker identify as IEN - 478

NOW 2 NEW HYSTER® LIFT TRUCKS

Extra-rugged for "INSIDE and OUTSIDE" Work

6000-LB. CAPACITY
HYSTER XA-60
The ideal "INSIDE-Outside" Truck.

Shorter and narrower than any other 6000-lb. lift truck. A great "inside" truck — equally efficient outside for all-purpose operation ...pneumatic tires. Write for Bulletin 1231.

Shorter, Narrower, Faster, with greater power and Traction — and unmatched "INSIDE-OUTSIDE" versatility!

8000-LB. CAPACITY
HYSTER ZA-80
The ideal "OUTSIDE-Inside" Truck.

Has long wheelbase, but SHORT OVER-ALL. For use where most of work is *outside*, but truck *also* works inside in close quarters. Pneumatic tires. Write for Bulletin 1230.

HYSTER COMPANY
THREE FACTORIES
2916 N. E. Clackamas, Portland 8, Ore.
1816 North Adams, Peoria 1, Illinois
1016 Myers Street, Danville, Illinois

Get the whole Hyster "Inside-Outside" story before you buy any Lift Truck! Ask your Hyster Dealer or write for Bulletins 1230, 1231.

If you write maker identify as IEN - 479

Fire Alarm Systems for OUTSTANDING DEPENDABILITY

Designed to operate unfailingly when needed, even years after installation, Couch Fire Alarm Systems assure positive, dependable protection of life and property.

If your plant requires:

- a simple evacuation alarm
- a coded alarm which locates the fire
- a tie-in with municipal alarms

Couch Fire Alarm Systems are the ideal solution. Write today for Bulletin 5211.

Simplified Systems of Communication

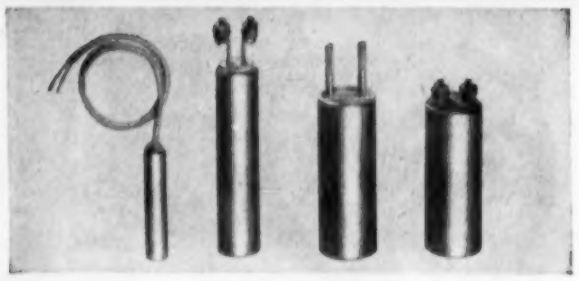
S.H. Couch Company, Inc.

NORTH QUINCY 71, MASSACHUSETTS

If you write maker identify as IEN - 480

HEAT When and Where You Want It - - -

WATLOW CARTRIDGE UNITS



For a highly concentrated, self-contained mass of heat.

Application — For heating metal parts by insertion into drilled and reamed holes. Sealed ends available, permit use for immersion purposes.

Construction — Nickel chromium resistor is wound on refractory core and embedded in high heat conductivity cement. Brass, steel, monel, or stainless steel sheaths.

Terminals—Rigid (several styles and sizes) or flexible (special lugs if desired).

Ratings—Densities 10-35 watts per sq. in.

WRITE for Watlow Electric Heating Units Catalog

WATLOW ELECTRIC MFG. CO.

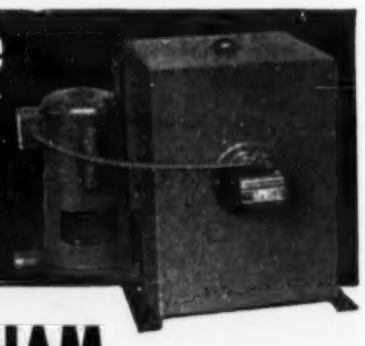
Since 1922 — Designers and Manufacturers of Electric Heating Units

1370 FERGUSON AVE.

SAINT LOUIS 14, MO.

If you write maker identify as IEN - 481

Save space fuel and installation expense



with DUNHAM CONDENSATION PUMPS

Dunham Condensate Pumps with side-mounted motors require little floor space, are low in first cost and inexpensive to maintain.

Rapid return of hot condensate to boilers saves fuel, saves makeup water . . . minimizes difficulties from boiler incrustation and system corrosion.

Dunham Pumps are easy to install without bars or bed plates. Completely wired, they're ready for operation when piping is connected. For full information, WRITE FOR BULLETIN 1401-11.

DUNHAM

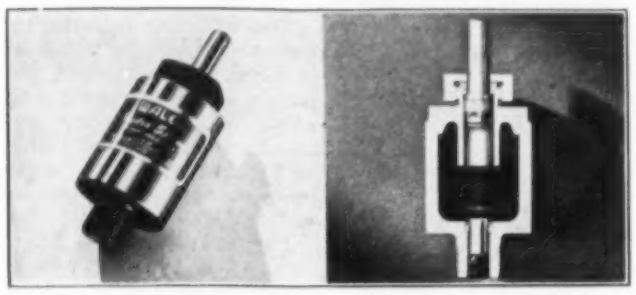
C. A. Dunham Co.
400 W. Madison St., Chicago 6, Ill.
In Canada:
C. A. Dunham Co., Ltd., Toronto
In England:
C. A. Dunham Co., Ltd., London

HEATING SYSTEMS AND EQUIPMENT

If you write maker identify as IEN - 482

PRESS TOOLS . . Hydraulic spring, compressible fluid, for stripper duty

Source: WALES-STRIPPIT CORP.
361 Payne Ave., North Tonawanda, N. Y.



Piston acts on enclosed fluid

The company announces availability of its hydraulic stripper spring employing a special compressible fluid known as Comproil. It was previously described IEN-4674-52 as an integral part of the company's punch and die units. The new spring is available in three models with stroke at ¼, ¾ and 1½ in. maximum for preload at 1,650, 400 and 500 pounds and maximum load at 3,800 pounds.

Smallest unit measures 1⅜ in. in diameter by 3¼ in. in length. The largest measures 2¼ by 5¾ inches. Stripping pressure is about six times that of a coil spring of similar size.

If you write maker identify as IEN - 483

TESTING . . Multi-range meter to install and service mobile radios

Source: RADIO CORP. OF AMERICA
1941 Front & Cooper Sts., Camden 2, N. J.

Turn switches to read

Current, voltage and comparative radiated power are measured by this new Type CX-7A multi-range voltmeter and milliammeter. The instrument applies in checking the power amplifier loading of a mobile transmitter. It assists in adjusting receiver output for maximum quieting sensitivity. Its short "sniffer" antenna permits measuring relative radiated power in the immediate field of a transmitting antenna. The meter movement is sensitive to 50 microamperes for full scale deflection. Accuracy is within 4 per cent of full scale on all voltage and current ranges. Dimensions are 5⅜ by 4½ by 8 inches.

Identify as IEN - 484

Your company purchases annual membership for $5 to the Diners' Club. It receives a membership card for each employee it names. The employees carry the cards, eat at designated restaurants where they show the cards and sign the checks. Your company receives a monthly statement. The listed restaurants are nation wide. Many of them have bars.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 485

STEAM

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability

Superior Steam Generators are manufactured in 18 sizes from 20 to 600 b.h.p., for pressures up to 250 p.s.i. or for hot water heating.

For complete details, write for Catalog 417

SUPERIOR COMBUSTION INDUSTRIES, Inc.

Factory: Emmaus, Pa.

Exec. Offices: Times Bldg., Times Sq., New York N. Y.

SUPERIOR STEAM GENERATORS

If you write maker identify as IEN - 486

...BUT IT BECOMES A PLASTIC

Most people think those shiny, sturdy cafeteria trays . . . resistant to everything from grease to hot detergents . . . are all plastic, but actually they're made with paper. Sheets of a special Riegel "saturating" paper, impregnated with thermosetting resins, are piled up to the right thickness and molded under high heat and pressure.

This is just one example of Riegel's ability to make paper for almost any need. We now produce more than 600 grades . . . many with properties that would surprise you. Tell us what you would like paper to do for you. If we can't supply it, we will be glad to refer you to others who can.

RIEGEL PAPER CORPORATION
P. O. Box 170 · Grand Central Station · New York 17, N. Y.

Riegel

• TAILOR-MADE PAPERS FOR INDUSTRIAL USE •

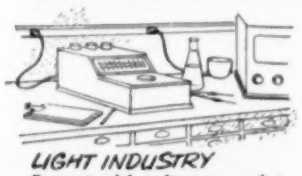
If you write maker identify as IEN - 487

You Save TIME MONEY EFFORT

with "Plug-In" Strip Multi-Outlet Wiring Assembly

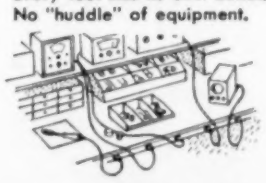
Plenty of handy electric outlets means operational profits—and "Plug-In" Strip provides outlets every 6" or 18"—where you need them —when you need them. Fast installations for new or existing structures, "Plug-In" Strip costs no more than ordinary wiring.

"Plug-In" Strip is a continuous conductor electrical system . . . no screws or soldered connections. Life-time tamper-proof receptacles. Easy to cut on the job. Available in 2-wire, (constant service) 3-wire (switch control) or grounding-type assemblies. Ideal for:



LABORATORIES
A spread of outlets for testing equipment, etc.

LIGHT INDUSTRY
Every tool has its own outlet. No "huddle" of equipment.



OFFICES
Office equipment "plugged-in" for convenient, immediate use.

Listed by Underwriters' Laboratories, Inc.
Write for complete details.

EVERYTHING IN WIRING POINTS TO

National Electric Products
PITTSBURGH, PA.

3 PLANTS • 6 WAREHOUSES • 42 SALES OFFICES

If you write maker identify as IEN - 489

"LIGHTING COSTS CUT IN HALF,

thanks to the LUSTRA MAN"

(says Vick Chemical Co., Philadelphia, Pa.)

Mr. E. J. Mulvehill, Jr., Vick Chemical's Electrician reports: "Since we adopted Lustra Fluorescent and Incandescent Lamps, maintenance has been cut in half and superior lighting has brought improved plant efficiency."

It will pay you to talk over your lighting problems with your local Lustra Man. Write us and we'll have him arrange for an appointment. Lustra Corporation, Dept. P-1. 36 Washington St., Brooklyn 1, N. Y.

Lustra

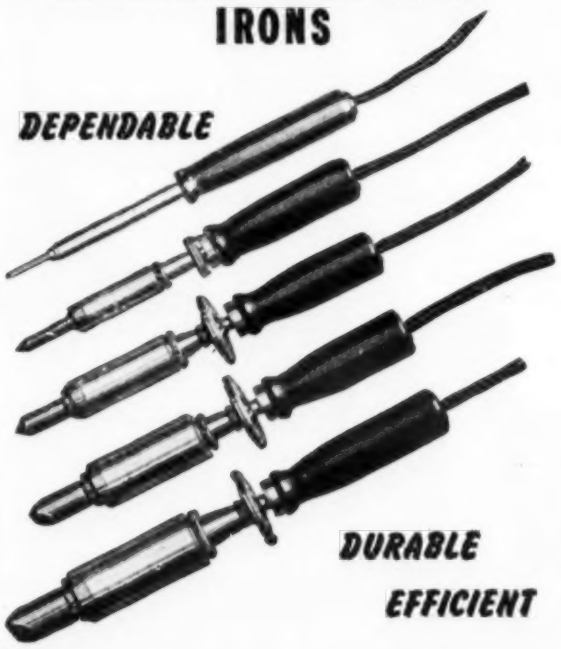
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

If you write maker identify as IEN - 490

American Beauty

ELECTRIC SOLDERING IRONS



are sturdily built for the hard usage of industrial service. Have plug type tips and are constructed on the unit system with each vital part, such as heating element, easily removable and replaceable. In 5 sizes, from 50 watts to 550 watts.

TEMPERATURE REGULATING STAND

This is a thermostatically-controlled device for the regulation of the temperature of an electric soldering iron. When placed on and connected to this stand, iron may be maintained at working temperature or through adjustment on bottom of stand at low or warm temperature.

Write for Catalog Sheets, Form No. 204-CP. Dept. SI-2

120-3

Since 1894 Always Dependable

AMERICAN ELECTRICAL HEATER CO.

DETROIT 2, MICHIGAN

If you write maker identify as IEN - 492

WINDING . . Twisting tool wraps wire loop tightly upon itself

Source: ERASER CO.
108 S. State St., Syracuse 2, N. Y.

Pull to twist

Wire twister is a new double end hand operated tool providing a rotating action upon longitudinal movement of a small head resembling the action of a Yankee screwdriver. Each end of the spiral tool body is equipped with a hook to engage a wire loop. Pulling the head results in rotating action that wraps the loop tightly upon itself. The tool is then turned end for end and the operation is repeated on the next loop. A No. G-3 for six turns lists at $4.50. A No. G-4 for twelve turns lists at $5.

If you write maker identify as IEN - 493

ADHESIVE . . Phenolic resin serves as a binder for foundry cores

Source: DUREZ PLASTICS & CHEMICALS INC.
6 Walck Road, North Tonawanda, N. Y.

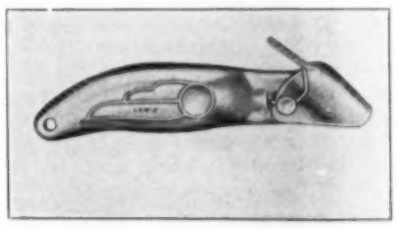
Technical data upon request

Durez 16039 is a new liquid core binder resin. It is intended for use in cores required in casting aluminum, bronze, gray iron, malleable iron, steel. The material is soluble in water but, upon heat curing, provides good water resistance. It has long shelf life, excellent bond strength and low volatility.

If you write maker identify as IEN - 494

CUTTING . . Carton opening knife mounts razor blade under spring guard

Source: FLASH BOX OPENER CO.
50-54 W. Houston St., New York 12, N. Y.



Will not cut accidentally

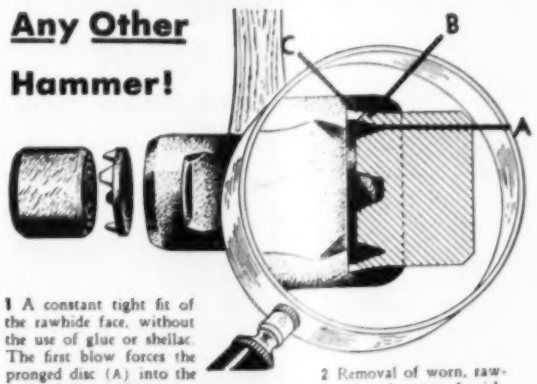
The guard that encloses the blade in this new Safety Knife is held in place by a spring. The guard will retract when the knife is pressed against a carton that is to be cut open and, when cutting pressure is released, it returns to cover the knife blade. When desired it can be completely retracted by finger pressure to expose the knife for inspection or adjustment. In addition to opening cartons the knife can be employed to cut paper, board, twine, rope, cloth, rubber, linoleum, wall paper, felt.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 495

GARLAND RAWHIDE HAMMERS

Compare These Features With Any Other Hammer!



1 A constant tight fit of the rawhide face, without the use of glue or shellac. The first blow forces the pronged disc (A) into the back of the rawhide plug (B), expanding it to fit securely to the slightly larger inside diameter of the shell (C).

2 Removal of worn, rawhide faces is easy and quick. Simply insert a chisel or heavy screwdriver in slot, give it a tap, and out come the disc and worn plug.

Made of resilient water buffalo hide, the toughest rawhide known.
Free folder lists sizes, weights, prices of Garland rawhide hammers, replacement faces, and mallets.

GARLAND MFG. CO., Saco, Maine

Mfrs. of Rawhide Hammers, Mallets, Loom Pickers

If you write maker identify as IEN - 496

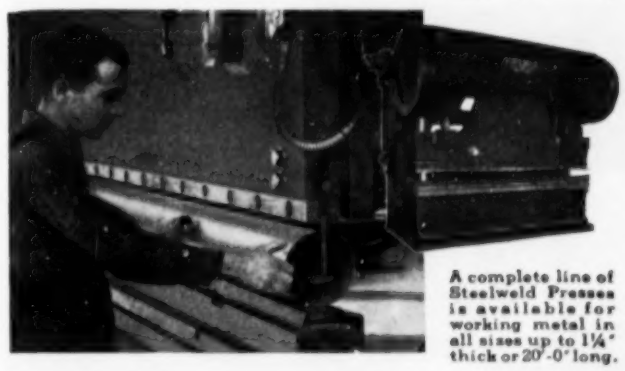
Now get immediate delivery on DAVIS stub boring tools with unfinished shanks

FOR Vertical Boring Mills, Horizontal Boring Mills, Engine Lathes, Turret Lathes, Vertical Turret Lathes, and Radial Drills . . . get these tools with unfinished shanks and finish them in your own shop. Made of high quality heat-treated steel . . . centers properly prepared for turning. For use of High Speed Steel, Super High Speed Steel, Stellite or Tungsten Carbide Tipped Cutters. Adjust to within .0001". See your nearest Davis representative or write for Bulletin DB110.

Whatever your boring problem, if Davis can't bore it—it can't be done!

DAVIS BORING TOOL DIVISION
GIDDINGS & LEWIS MACHINE TOOL COMPANY
FOND DU LAC, WISCONSIN

If you write maker identify as IEN - 497



A complete line of Steelweld Presses is available for working metal in all sizes up to 1¼" thick or 20'-0" long.

TUBES — Round, Square, Hexagon MADE WITH BENDING PRESSES

Small diameter cylinders, square and hexagon tubing, and other closed shapes are easily made with simple dies on Steelweld Presses. The same machines are used for standard bending work, multiple punching, corrugating and various forming operations.

Because Steelwelds are such all around useful tools, we urge you to check on their many possibilities for serving your plant profitably.

STEELWELD BENDING PRESSES CATALOG No. 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4243 East 281st St., Wickliffe, O.

STEELWELD PRESSES

If you write maker identify as IEN - 498

85,000 R.P.M.!

ARO GRINDERS for Modern Metal Alloys!

HIGH SPEED...with SAFETY!

ARO

AIR TOOLS

Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIRCRAFT PRODUCTS . GREASE FITTINGS

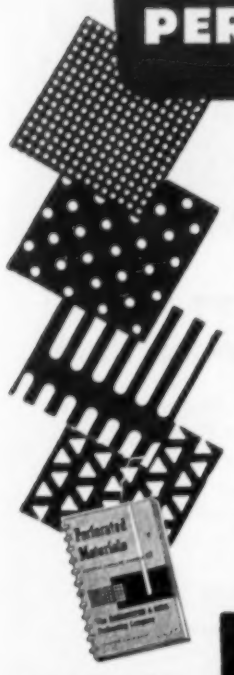
ARO's famous Turbine Grinder Model 7335 with Erickson precision collets . . . greater gripping power for *greater safety* at high grinding speeds. 1/64" to 1/4" sizes. Excellent for carbide burr work and small mounted points. Write for catalog.

The Aro Equipment Corporation, Bryan, Ohio

Aro Equipment of Canada, Ltd., Toronto

If you write maker identify as **IEN - 499**

Have You Considered H & K PERFORATIONS



. . . to answer the problems of eye appeal or ventilation or drainage or acoustical correction, or to provide a satisfactory material to screen, grade or guard your product.

H & K Perforations are furnished in a wide range of sizes, shapes and spacings in all currently available metals and nearly all plastics which are obtainable in the form of plates, sheets and coils.

We can perforate sheets to special sizes and form, weld and otherwise fabricate to your specification.

Tell us your needs and let us make recommendations and quote you prices.

Our catalog No. 62 will be promptly sent upon request.

The Harrington & King Perforating Co.
5637 FILLMORE ST., CHICAGO 44, ILL.
114 LIBERTY ST., NEW YORK 6, N. Y.

If you write maker identify as **IEN - 500**

LOW COST POWER TRANSMISSION

Line-O-Power Drives—Straight line and right angle (horizontal and vertical) units. Vertical available for extended output shafts.

Foote Bros.-Louis Allis Gearmotors—17 sizes with output speeds from 7.5 to 780 r.p.m. and capacities of 1 to 150 h.p.

Maxi-Power Helical Gear Drives—42 sizes available in this heavy-duty line. Ratios 2.08 up to 360 to 1, capacities up to 1550 h.p.

Hygrade Worm Gear Drives—Horizontal and vertical types. Hytop vertical accommodates long, unsupported output shafts.

WRITE FOR BULLETINS
LPB—*Line-O-Power Drives*
GMA—*Foote Bros.-Louis Allis Gearmotors*
HGB—*Hygrade Worm Gear Drives*
MPB—*Maxi-Power Helical Gear Drives*

FOOTE BROS.
FOOTE BROS. GEAR AND MACHINE CORPORATION
4545 S. WESTERN BOULEVARD CHICAGO 9, ILLINOIS

If you write maker identify as **IEN - 501**

PRECISION MEASURING

SCHERR MICROMETERS
1/10 READINGS AT NO EXTRA COST
$9.75

Drop-forged steel frame easy to read. "No Glare" graduations. Guaranteed accuracy and unsurpassed workmanship.

For greater savings in dollars and better satisfaction, use "Scherr Tools".

Complete stock. All sizes — MM. or Inch.

MAUSER VERNIER CALIPER
$14.75

For inside - outside and depth measurements in 1/1000, 1/128, 1/10mm and 1/20mm.

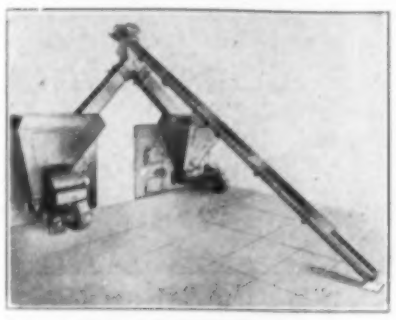
If not available from your dealer, order direct.
WRITE FOR ILLUSTRATED CATALOG

GEORGE SCHERR CO., Inc.
COMPLETE LINE OF PRECISION INSTRUMENTS
188-C LAFAYETTE ST. • NEW YORK 12, N. Y.

If you write maker identify as **IEN - 502**

CONVEYING . . Motor driven screw in trough to convey bulk materials

Source: CANTON STOKER CORP.
841 Andrew Place, S. W., Canton, Ohio



Minimizes shoveling

The illustration shows a new adaptation of the feed screw employed in the company's line of stokers in connection with a cast iron trough made up of flanged sections and cover plates that enclose the top except for a feed opening at one end. In this illustration of a test set-up of conveyor and two of the company's Ramfeed stokers the lower feed end of the conveyor will be located in a coal bunker in front of the boiler setting. Coal can be delivered to either stoker by operating gate controls.

Flow-Tube is the trade name. A range of sizes in the line will handle a maximum of 10,000 lb. of coal per hour or equivalent volumes of other materials such as grain, pellets, flakes, seed, chips, fertilizer. Installatio.. can be made at an angle or horizontally to serve one or more points of delivery.

If you write maker identify as **IEN - 503**

SOLDERING . . Copper tip iron is heated by a magnesium cartridge

Source: KEMODE MFG. CO.
161-63 W. 18th St., New York 11, N. Y.

Cartridge is safe to store and handle

The hollow body back of the copper tip in this new Quik-Shot iron unthreads to open, as shown in the illustration, for insertion of a magnesium cartridge. When it has been closed upon the cartridge a spring operated plunger is drawn back at the rear of the handle and released. The plunger moves forward by spring action to strike a primer in the end of the cartridge. This ignites the magnesium mixture and very quickly the cartridge temperature rises to about 860 deg. F.

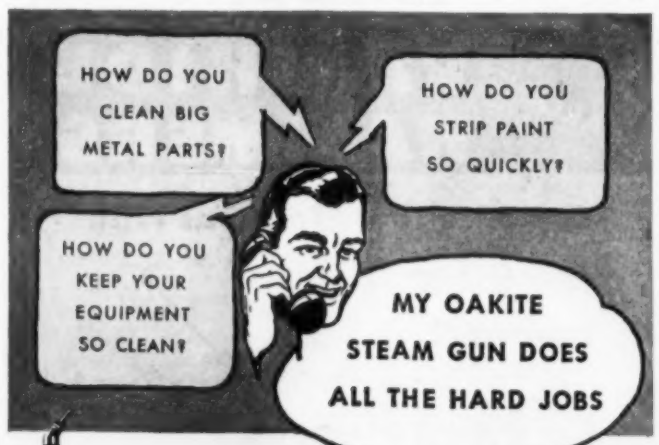
The tip will reach working temperature in about 10 sec. and this temperature will hold for 6 to 8 minutes. The tip is replaceable and can be ordered in ⅜, ⅝ and 1-in. sizes. List price, depending on tip size, is $7.50 to $8.25. A carton of 12 cartridges is about $2. Separate tips list at $2.25 for the two smaller units, $3 for the 1-in. size in chisel shape only.

Identify as **IEN - 504**

If you own an adjustable open end wrench, or perhaps a hundred of them, we suggest a little pamphlet that has been published by Utica Drop Forge. It tells you what to do if the jaws won't move, or open all the way, or close tight, or if they are burred or loose or broken.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 505**



This man knows the best way to clean metal parts that are too large for tanks or washing machines . . . He knows the best way to strip paint from large surfaces.

His Oakite Steam Gun will clean large equipment like die casting machines, wire drawing machines, blooming mill rollers, brass reduction machines, millers and grinders, drill presses, stamping machines, etc. . . It will do practically every cleaning job that's too big or too difficult for ordinary methods.

FREE For your copy of "*Time saved with Oakite steam-detergent cleaning*" write to Oakite Products, Inc., 16A Rector St., New York 6, N. Y.

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

If you write maker identify as **IEN - 506**

HERE'S A FORK TRUCK *that will really reduce your handling costs*

A factual comparison of types and makes will show that Lewis-Shepard Spacemaster Electric Fork Trucks give you more of the features you want, the quality and dependability you need, and the savings you expect.

1. *Operate in less space* — compact design and smaller turning radius.
2. *Greater speed*—more powerful traction motor, faster lift motor.
3. *Safer reverse operation*—Standrive gives operator complete control in reverse.
4. *Smoother, timed acceleration* — no jerks . . . smoother deceleration too. Deadman brake for extra safety.
5. *No grease points* — and absolutely no under truck adjustments.

TO HELP YOU BASE YOUR DECISION ON FACTS

Get this handy "Fork Truck Comparison Chart". It lists buying "guides" . . . permits you to make your own unbiased comparison. Write for it.

LEWIS-SHEPARD Products, Inc.
133 Walnut St., Watertown 72, Mass.

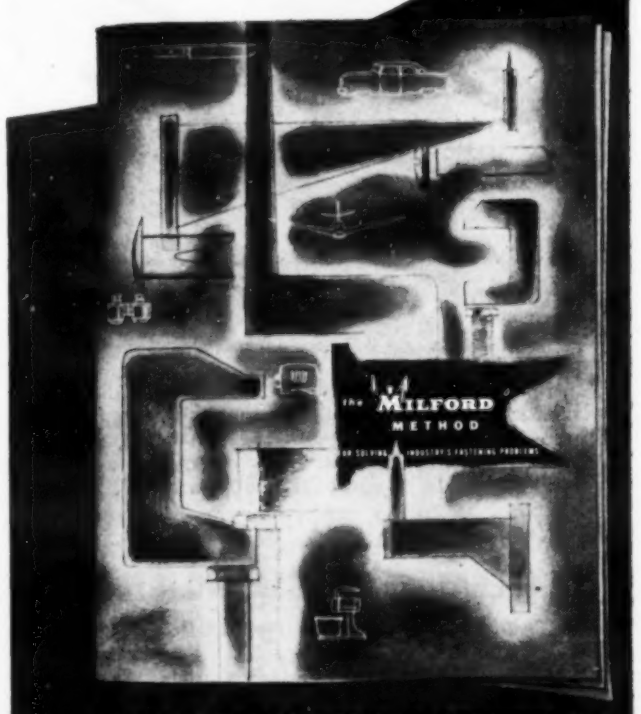
Nation-wide Service — See "Trucks, Industrial" in your Yellow Phone Book

If you write maker identify as **IEN - 507**

A new WAY TO

lower manufacturing costs
increased plant output
better product quality

through Milford's scientific approach to product and parts assembly
. . . **"THE MILFORD METHOD"**



EVERYONE WHO DESIGNS, SPECIFIES OR BUYS fasteners should have this important brochure at his fingertips. Write for your copy today.

See our catalog in the 1953 Sweet's Product Designers File.

Est. 1919

the MILFORD RIVET & MACHINE CO.
. . . the name to rivet in your memory for fasteners

927 BRIDGEPORT AVE. MILFORD, CONN.
1156 W. RIVER ST. ELYRIA, OHIO
76 PLATT STREET HATBORO, PA.
876 ILLINOIS AVENUE AURORA, ILLINOIS
751 SO. PALM AVENUE ALHAMBRA, CALIF.

If you write maker identify as **IEN - 509**

The most important parts in industry pass through

KRAUS HOPPERS

Let Kraus help you develop the right hopper, chute and assembly machines to handle the parts that make up your product. Send sample pieces for quotations today.

kdi

Kraus Design, Inc.
948 Exchange St.
Rochester 8, N. Y.

If you write maker identify as **IEN - 510**

SWECO SEPARATORS

... are Engineered for Every Screening Need

- Efficient Single or Multiple Deck Screening
- Proved Greater Production Capacities
- From Coarse to as fine as 325 Mesh
- Wet or Dry Screening
- Low Cost Operation
- Unit Completely Self Contained with only Three Moving Parts
- Readily Adjustable Horizontal and Vertical Motion
- Clamp Ring Insures Rapid Screen Cloth Changes
- No Special Foundation, Supports or Base Required for instant Production
- Production Separation with Laboratory Accuracy

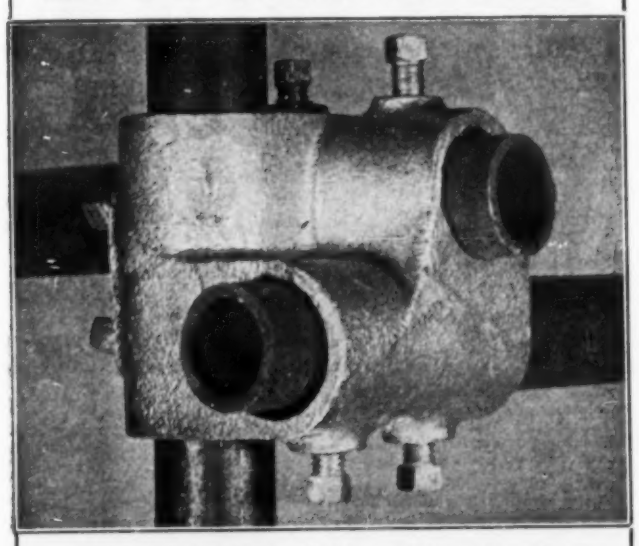
Both Standard and Custom-Engineered Models Available

Write now for new 8-page catalog

SEPARATOR DIVISION
SOUTHWESTERN ENGINEERING CO.
4800 Santa Fe Ave., Los Angeles 58, Calif.

If you write maker identify as **IEN - 511**

MAKE YOUR OWN SCAFFOLDS WITH PIPE



MAINTENANCE AND CONSTRUCTION MEN ARE BUILDING

Safe, durable, adjustable, frame and rolling scaffolds to suit their desire and needs for all of their easy and difficult jobs with:

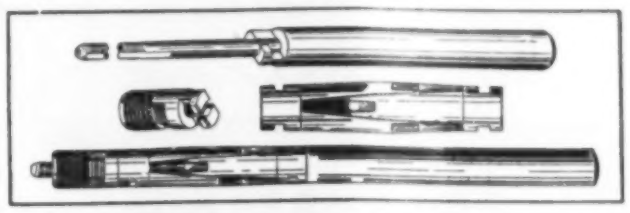
AMIDON FITTINGS
and standard pipe • pictures available

AMIDON ENGINEERING CO., ELYRIA 14, O.

If you write maker identify as **IEN - 512**

LAPPING . . Adjustable tool to finish holes straight and round

Source: PERFECTOLE INDUSTRIES
Box 086, Riverdale Station, Dayton 5, Ohio



Complete assembly $1.90 to $2.90

Five sizes, with nominal diameter at ¼ to ½ in., are included in this new line of adjustable lapping tools. Each tool consists of a holder, a two-part body with interlocking prongs and an adjusting nut assembly. The body locates on the holder between the shank and the nut. It and the nut lock in place with bayonet connections.

The lap body becomes charged and retains compound for fast cutting. The nut operates on a left hand thread to prevent damage by accidentally inserting the lap in a hole the wrong size. Extra die cast bodies list at 50 to 95 cents.

If you write maker identify as **IEN - 513**

GLARE PROOFING . . Liquid material sprays on windows to exclude sunlight

Source: FADE-PROOF CORP.
3518-22 N. Spaulding Ave., Chicago 18, Ill.

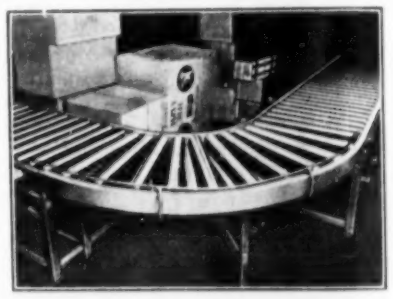
List is $10 per gallon

Glare-Out is a new transparent liquid with a blue-green tint for application by spraying or roller coating on windows or skylights. The liquid dries to a permanent coating that will not chip or wash off. It can be washed to keep it clean. One gallon covers 400 square feet. Packaging is in 1-gal. cans as standard unit quantity.

If you write maker identify as **IEN - 514**

CONVEYING . . Power curve section for a gravity roller installation

Source: HARRY J. FERGUSON
125 West Ave., Jenkintown, Pa.



The streamliner

A motor rating ⅓ hp. is connected to drive the rollers in this new 90 or 180-deg. power curve to keep packages riding freely in a gravity conveyor installation. Rollers, measuring 2 in. in diameter, are set in a 5½-in. 10-gage steel channel on 4 or 6-in. centers. Width between channels can be specified at 10 to 30 in. in 2-in. increments. The rollers operate at a constant speed of 45 fpm. Minimum clearance above the floor is 18 inches.

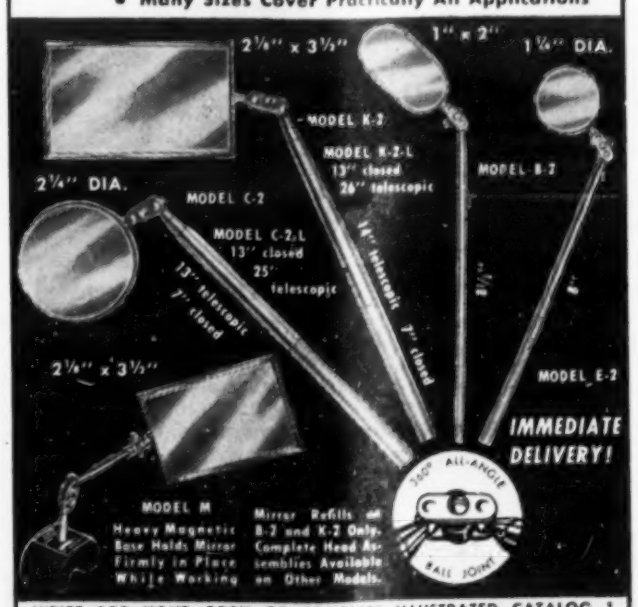
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 515**

WORK INSPECTION MIRRORS

speed production • prevent accidents

- Exclusive All-Angle Ball Joints
- Precision Engineered
- Replaceable Copper-Backed Clear View Mirrors
- Folds and Fits into Pocket
- Many Sizes Cover Practically All Applications



WRITE FOR YOUR COPY OF COMPLETE ILLUSTRATED CATALOG 1

ULLMAN PRODUCTS CORPORATION
156 PROSPECT AVE., BROOKLYN 15, N. Y.

If you write maker identify as **IEN - 516**

NEW DESIGN GUIDE for better clutching and braking!

How to improve control : : : speed operation

• *Free* booklet for machine designers and production men interested in making *major* improvements in machine performance and control. Gives you complete specifications, torque ratings and controls for complete line of lightning-fast, precisely controlled, amazingly simple Warner Electric Brakes and Clutches. Applies to any machine that stops and starts. Write for your free copy, or ask Warner Representative.

WARNER

WARNER ELECTRIC BRAKE & CLUTCH CO.
BELOIT, WISCONSIN, U.S.A.

If you write maker identify as **IEN - 517**

CUTTING COSTS WITH ALLMUL

"B&W ALLMUL Firebrick lasts 6 times longer"

Semi-mullite brick bungs in the hottest part of a butt welding furnace spalled badly after six weeks. Allmul bungs in the same location were still going strong after 39 weeks—in better condition than the semi-mullite bungs after six weeks. Yet Allmul cost little more than the original semi-mullite refractory. As a result, Allmul is now used in uptake arches, uptake side walls and crossovers.

Bulletin R-29 gives all the facts on B&W Allmul. Write for your copy.

THE BABCOCK & WILCOX CO.
Refractories Division
GENERAL OFFICES: 161 EAST 42nd ST., NEW YORK 17, N. Y.
WORKS: AUGUSTA, GA.

If you write maker identify as **IEN - 518**

A FURNACE ON WHEELS FOR YOUR PLANT!

• You can avoid layoffs, speed work in cold areas, provide temporary heat for warehouses with Herman Nelson Portable Heaters. They also provide auxiliary heating for those extra cold days or during loading or unloading operations and for scores of other heating and drying jobs.

HERMAN NELSON ECONOMY MODEL
Priced lower for the smaller jobs. Capacity 125,000-190,000 BTU/hr. Oil fired, electric powered. Costs only 19¢ per hour to operate. Other models available—electric or gasoline powered with capacities to 450,000 BTU/hr.

The only completely safe portable heater that uses flexible ducts to spot heat where most needed—and remember, only uncontaminated air heaters are absolutely safe!

Models as low as $360.00—total cost often saved during first season. For full information, write Dept. 105, Herman Nelson Division, American Air Filter Company, Inc., Moline, Illinois.

If you write maker identify as IEN - 519

Extra thin . . . for cleaner, sharper-line masking. Greater *flexibility* . . . for masking curves faster. Extra *strength* . . . to hold positively yet strip off fast in one piece. Resists stains, oils, solvents—leaves no residue. Gives on-the-job speed and results for a faster, better job . . . *at lower cost.* Write for information and free samples. Mystik Adhesive Products, 2644 North Kildare Avenue, Chicago 39.

© MAP 1952 T. M. MYSTIK and THINFLEX Registered

If you write maker identify as IEN - 520

for the MAN ON THE JOB

84 pages crammed with ideas, pictures and data on how to frame, hang, support and mount all kinds of mechanical and electrical equipment with adjustable UNISTRUT All-Purpose Metal Framing.

Perfect for the man on the job . . . most useful, too, as a handy reference catalog for the architect, engineer, draftsman, contractor, or builder. Just pocket size, easy to handle, always within reach when you want it. Order your free copy of the *New* UNISTRUT Catalog No. 800 today! With UNISTRUT channel and fittings you can build all types of conduit, cable, pipe and tubing hangers and supports, framing, mounts, racks, tables, benches, and many other structures with just a hacksaw and a wrench. No drilling, no welding. 100% adjustable and re-usable.

These are the Basic Components of the UNISTRUT Metal Framing System

Write for your FREE copy today

UNISTRUT PRODUCTS COMPANY
1013 W. Washington Blvd., Chicago 7, Illinois Dept. D1

Please send me a copy of the new UNISTRUT Pocket Catalog No. 800, without obligation.

Name.....
Company.....
Address.....
City.....Zone.....State.....

For Your Special Information

If you write maker identify as IEN - 522

THOMAS' REGISTER . . 1953 edition lists all products and their makers

Source: THOMAS PUBLISHING CO.
467 Eighth Ave., New York 1, N. Y.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

Please note the caption under the illustration in this announcement of the 1953 edition of Thomas' Register. It is the same as the foot note that appears at the bottom of each editorial column in IEN through the year. Literally the statement it makes is true of the complete four volume edition.

Two of the three volumes shown contain the product classifications in alphabetical order, some 85,000 of them. Under each are the names of the manufacturers, their addresses and size ratings with descriptive information and advertising that defines the particular characteristics of each product. The third volume lists the manufacturers in alphabetical order and includes trade names, thousands of them, all in alphabetical order with the name of the company owning each. A fourth volume, not shown, contains a finding index. The four volumes total a bit over 8,000 pages.

You can refer quickly to any of the approximate 100,000 manufacturers in the United States who make any product you can think of, if you have the set of books at your desk. It will cost you only $15 plus handling charges. You can make reservation now for billing later by writing to Mr. W. C. Scoltock, Circulation Manager, at the address shown at the start of this item. Or, if you prefer, check the IEN number on your reader service form.

U. S. SAVINGS BONDS IEN S-1

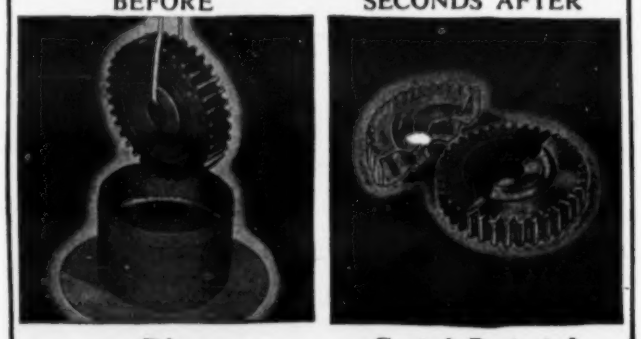
You can perform a very important service, if your plant is not now on the Payroll Savings Plan, or if there is any opportunity to increase employee participation on your present setup. Contact the Savings Bond Division, U. S. Treasury Department, Suite 700, Washington, D. C., for a copy of the Plan showing how to put all of your workers into it with profit and security to themselves in the years to come. The Division will send you the latest information on the whole subject so you will be fully armed.

Top Management:
***YOUR* BOOST**
IS NEEDED MOST

If you write maker identify as IEN - 523

HOT MELT PLASTIC COATINGS
for GEARS • TOOLS • PRECISION PARTS

BEFORE SECONDS AFTER



Dip **Coated•Protected**

DIP-PAK Protect vital, expensive tools, gears, and machined parts during storage and shipping with Fidelity's durable, transparent plastic coatings. Merely melt coating briquette, dip parts, cool. Lasts indefinitely. Tough; abrasive, moisture, rust resistant. To remove, slit, peel. Re-melt, re-use coating. Economical, practical, rapid. Protect parts; save money.

Write for Bulletins and Free Samples
Fidelity Chemical Products Corp.
471 Frelinghuysen Avenue, Newark 5, N. J.

If you write maker identify as IEN - 524

SHEPARD NILES
LIFT ABOUT Jr.

One man replaces many — and moves more goods faster — with the Shepard Niles Lift About Jr. This lightweight, low cost Electric Hoist frees valuable floor space, puts waste ceiling area to work.

Loads of 500 or 1,000 lbs. are handled easily by an older man, woman or youth.

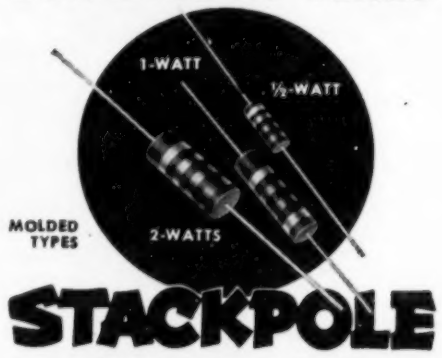
Learn how the Lift About Jr. fits into your production picture by calling in the Shepard Niles representative. He'll make sure you get the right capacity and controls for your handling job. Write today for Bulletin 127 or 171 and ask to have a representative stop by.

Specialists in loads through-the-air since 1903.

SHEPARD NILES
CRANE AND HOIST CORPORATION
1010 SCHUYLER AVE., MONTOUR FALLS, N. Y.

If you write maker identify as IEN - 525

A RELIABLE SOURCE OF SUPPLY FOR
Dependable Resistors
FOR OVER 20 YEARS



STACKPOLE
Electronic Components Division
STACKPOLE CARBON CO., St. Marys, Pa.

Also VARIABLE RESISTORS—IRON CORES—CERAMAG® CORES—MOLDED COIL FORMS—LINE, SLIDE and ROTARY SWITCHES, etc.

If you write maker identify as IEN - 526

Now, for the first time, 12 standard scale graduations are illustrated ¾ size in a single spread for easy reference. You can select that scale, or series of scales, to serve your particular requirements — and be certain of getting exactly the type of scale desired.

Every DURALINE Scale is the last word in precision. It is ground from solid aluminum, engine divided at 70° F, and anodized. It is light in weight — easy to read, will not smudge paper and cannot file the pencil. Eighteen design and process improvements have been introduced. See why they make DURALINE the finest scale on the market today.

Ask your dealer for a copy of the Duraline Scale Selector — or write us direct. No obligation — except to help you make cleaner drawings — faster.

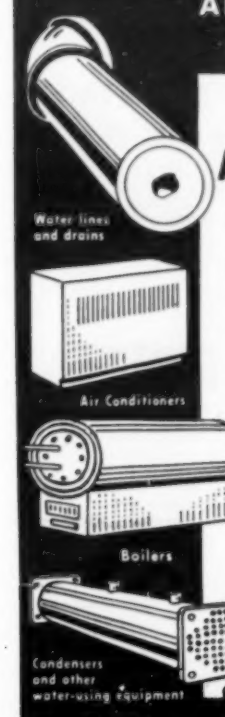
THE UNIVERSAL DRAFTING MACHINE CORP.
7960 LORAIN AVENUE • CLEVELAND 2, OHIO

UNIVERSAL
DRAFTING MACHINE DURALINE SCALES

If you write maker identify as **IEN - 527**

Remove Lime Scale

AND RUST FROM WATER-USING EQUIPMENT



A *Limex* Rectifier Will Avoid Costly Breakdowns

Pays for itself in a few months and continues to reduce operating expenses by removing accumulated lime scale and rust from water-using machines . . . and prevents it from re-forming. Eliminates costly breakdowns, replacement of parts, and down time. Inexpensive to install and operate.

FREE 30-DAY TRIAL At Our Expense

Used successfully in thousands of plants and scores of different industries all over the world. Write today for complete literature. Send a pint of your water for FREE ANALYSIS and recommendations without obligation.

THE *Limex* CORP.
911 MASSACHUSETTS AVE. · INDIANAPOLIS 6, INDIANA

If you write maker identify as **IEN - 528**

This test usually saves 40% to 70% on glove costs

(with improved safety and employee attitude)

On many industrial operations, modern gloves made of coated fabric have largely replaced canvas, leather and unlined rubber gloves. Improved coatings, now available, far exceed these older materials in their resistance to cutting action, abrasion, oils, greases, acids, caustics, solvents, degreasants and extremes of temperature.

In addition to cost savings averaging 40% to 70% (as much as 30c per man hour saved under severe conditions) these *job-fitted* gloves solve many problems — from avoiding fingermarks on polished laminates to preventing acid burns in plating baths — from repelling sharp slivers in broach coolant to providing a firm grip on sheet glass.

Make This Simple Test at Our Expense

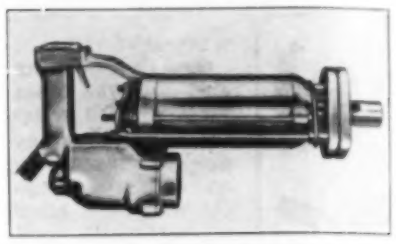
Send a brief description of your operation, materials handled and temperature condition. Without charge, we will recommend and supply sample job-fitted gloves and procedure for testing on-the-job. As world's largest maker of coated industrial gloves our laboratory also develops special gloves to meet special problems. Address Safety Engineering Service, **Edmont Manufacturing Company, 1226 Walnut St., Coshocton, Ohio.**

Edmont job-fitted work gloves
Recommended and supplied by leading industrial distributors

If you write maker identify as **IEN - 530**

ROCK DRILLING . . Electric hammer for holes to 2 inches in concrete

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.



Strikes and rotates bit

Model 26-RO represents new design in the company's line of electric hammers. It supplements a previously developed 1½-in. assembly. Operation is at synchronous speed of 3,600 rpm. on a 110 or 220-volt ac. line as specified. The hammer is designed for general maintenance and construction uses. It is supplied with an extension cable and plug and with control at a trigger switch. It provides power rotation, accompanying the hammer action, by means of a rubber ratchet mechanism that acts on the recoil of the piston.

If you write maker identify as **IEN - 531**

PLASTIC . . Polyester film rates 25,000 lb. per sq. in. tension

Source: E. I. DU PONT DE NEMOURS & CO.
2518 Nemours Bldg., Wilmington 98, Del.

Companion to Dacron fiber

Mylar trade names a new polyester plastic film now available in production quantities at $3 to $4 a pound depending upon thickness. The material is available in a crystal clear sheet or in a translucent form. It can be made in gages as fine as 0.00025 inch.

The film will retain dimensions and properties through a range of ambient temperature from minus 94 to plus 392 deg. F. and still retain most of its strength and electrical insulating properties. It will store electrical energy and has high dielectric strength without excessive power loss.

If you write maker identify as **IEN - 532**

METER . . Electric instrument, ruggedized design in four sizes

Source: PHAOSTRON CO.
149-53 Pasadena Ave., South Pasadena, Calif.

Okay for rough service

The company announces addition of ruggedized and hermetically sealed design to its lines of electric meters in four sizes from 1½ to 4½ inches. Each instrument is completely interchangeable with existing ruggedized types in ac. and dc. ranges. The 2½ and 3½-in. sizes meet the dimensional requirements of JAN-1-6. Manufacture is in the company's air conditioned temperature controlled plant where the component parts are fabricated, assembled, adjusted, tested and hermetically sealed into completed form.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 533**

BALL BUSHING

If you write maker identify as **IEN - 534**

ILLINOIS GLOVES

ARE BUILT TO LAST

THEY REALLY TAKE A BEATING . . . AND YOU CAN'T BEAT 'EM FOR CUTTING COSTS!

Need a glove to handle a rough job? Want a glove that's the finest quality for the price? Illinois' got it . . . the glove that battles its way through any job . . . stands up in contact with heat, oil, acids or water, and wears, and wears, and wears! They're tested in the lab and on the job to assure maximum service. Give Illinois Gloves a try . . . you won't make a better buy!

Write Industrial Division Illinois Glove Company for catalog & prices

ILLINOIS GLOVE CO., CHAMPAIGN, ILL.

If you write maker identify as **IEN - 535**

Viking

• THE ORIGINAL COMPOUND SHEAR

APPLIES THE STRENGTH OF 20 MEN AT THE BLADE

Cuts without kinking as easily as a tailor's shears thru cloth.
- Cuts Band Iron
- ¼" Brass (any width)
- Copper, Sheet Iron Tin, Band Saws (any thickness or width)
- 12 Gauge Bessemer Steel

OVERALL LENGTH 34" · WEIGHT 22 LBS.
IMMEDIATE DELIVERY $29.00

VIKING SHEAR COMPANY
1065 W. 20th ST. • ERIE, PA.

If you write maker identify as **IEN - 536**

Here's a new lightweight cutter, built to cut flat steel strapping easily, quickly and safely.

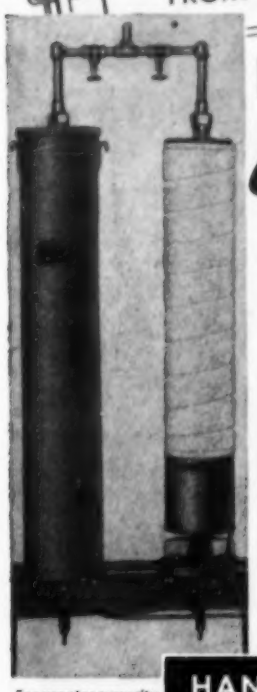
It's Acme Steel's new E14AO Strap Cutter. It weighs just one pound and it's only 9½ inches long—but it cuts steel strapping up to ¾ inch. Won't dig into carton or bale. Built-in band guide keeps strap from turning on edge or wedging between blades.

If your receiving room gets strapped packages—and who doesn't?—you need this new cutter. Call the Acme Steel service office nearest you, or write Acme Steel Products Division, Dept. IEN-13.

ACME STEEL COMPANY
2840 Archer Avenue, Chicago 8, Illinois
ACME STEEL

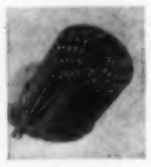
If you write maker identify as IEN - 537

KEEP YOUR INSTRUMENTS FREE FROM DIRT AND MOISTURE



HANKISON
Model A-100
Condensifilter

A LOW DEW POINT IS ESSENTIAL for instrument air. CONDENSIFILTERS REDUCE DEW POINTS. Condensing section cools air; condenses water and oil vapors. Filter cartridge removes dirt and solid matter. Trap automatically discharges collected contamination. Model A-100—100 scfm capacity at 100 psig.



Condenser where temperature and dew point are reduced.

Also available—Model B-30-D with a capacity of 30 scfm of free air at 100 psig.

Write For Bulletin A-100

For greater capacity or uninterrupted service, several units can be installed in parallel.

HANKISON Corporation
982 Benkeville Road
PITTSBURGH 16, PA.

If you write maker identify as IEN - 538

Hardness Readings in 2 seconds!

Webster
PORTABLE
Hardness Testers
FOR NON-FERROUS METALS

TWO LOW-COST MODELS differing in sensitivity for rapidly testing hardness of aluminum, brass, copper, etc. No training required; one hand operation. Hardness readings in 2 seconds anywhere in shop. Can be correlated to standard hardness scales. Quick reading dial. Special anvil design tests all shapes: sheets, extrusions, tubing, strip stock. Capacity ¼". Simple, rugged design, easy maintenance.

MODEL B Direct hardness readings on all aluminum alloys.

MODEL B-75 Direct hardness readings on copper, brass, etc.

Free FOLDER provides full information and shows sectional views.

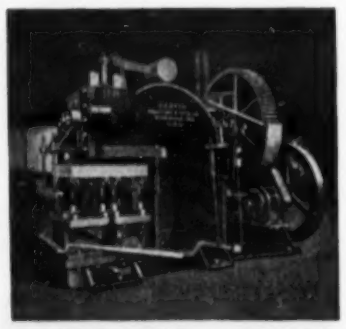
WEBSTER INSTRUMENT Inc. DEPT. N, 11856 Mississippi Ave. LOS ANGELES 25, CALIFORNIA

If you write maker identify as IEN - 539

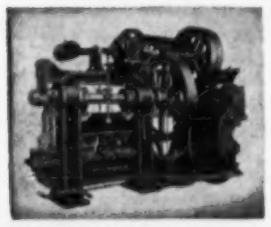
BEATTY *Machines*

SPEED YOUR PRODUCTION

There's a better-designed, better-built BEATTY machine for practically every metal-working application. If you have a production problem, let a Beatty engineer study it.



BEATTY No. 11-B Heavy Duty Punch for production tooling and use with BEATTY Spacing Table.



BEATTY CoPunShear — one compact unit handles Coping, Punching, Shearing.

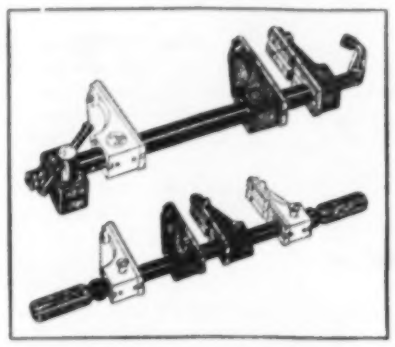
BEATTY Horizontal Hydraulic Bulldozer for heavy forming, flanging, bending.

BEATTY MACHINE & MFG. CO. HAMMOND, INDIANA

If you write maker identify as IEN - 540

VISE . . Hand operated assembly safely presents work to drill or saw

Source: AMERICAN MACHINE & FOUNDRY CO.
511 Fifth Ave., Room 1509, New York 17, N. Y.



Ask for Float-Lock Bulletin

Two designs are included in the Float-Lock vise on which the company has acquired manufacture and sales. One assembly employs a pivoting anchor for application on a drilling machine table. The second design mounts gripping handles at both ends of the screw and sleeve to hold and present work on a band sawing machine. The drilling assembly has maximum capacity to 8 inches. The assembly for sawing rates to 10 inches. Both can be operated on three sides. The vise for sawing mounts posts on one side of the jaws for attachment of a feed chain.

Two sizes for drilling machines, from 13 to 15 in. and from 16 to 21 in., list at $28 and $34. One unit for application on the table of a band sawing machine lists at $28.

If you write maker identify as IEN - 541

PYROMETER . . Optical instrument, pocket size, applies to 3,300 deg. F.

Source: FERRO CORP.
4148-52 E. 56th St., Cleveland 5, Ohio

Made in Germany

Radiant heat, acting upon a small bi-metal spiral spring, moves a pointer to read temperature with this new pocket size optical pyrometer. The measuring spiral is artificially aged by temperature changes before being installed. Assembly is in a telescope-like housing measuring about 2¼ in. in outside diameter by 1½ in. in total length in the focus of a convergent lens.

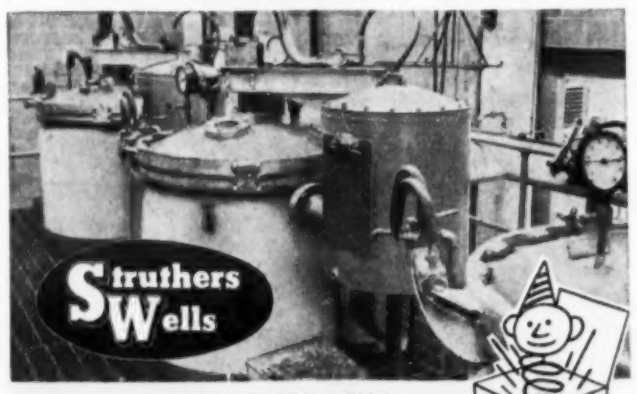
A built-in eye piece is on the opposite side of the lens and through this the operator can view the object as well as the deflection of the needle on its calibrated scale. The fixed end of the measuring spiral is connected to a second bi-metal spiral to correct for ambient temperature. This second spiral is not influenced by the radiant heat. The instrument can be set to zero by turning the eye piece. A red glass disc mounts in the eye piece to protect the operator's vision.

Identify as IEN - 542

Tiny ice cubes, ⅝ inch across, pour out of a new ice making machine that has been developed by **Frigidaire.** A rotary refrigerating compressor supplies the "cold." A stainless steel storage bin holds about 10,000 cubes. The machine will make 200 pounds or 20,000 cubes per day. They do not stick together in the bin. Assembly is in a counter-high cabinet.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 543



THE STRUTHERS WELLS
IMPREGNATOR
. . . with the Quick Opening Closure!

for Impregnating Electrical Coils, Aluminum or Magnesium Castings, Carbon Parts and Other Materials

Write for Bulletin B-38 (on your letterhead, please)

The improved Struthers Wells impregnating system illustrated—one of many recent installations—is heated with circulating hot oil, with a separate hot air system for preheating the charge before impregnation. Covers are quickly removed or installed—with great savings in operating labor. Furnished as bare units, or complete with piping, instruments and accessories. Heated by steam, electricity or circulating heat transfer medium.

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA.

If you write maker identify as IEN - 544

PULVERIZES
and REMOVES GRIME from floors
in 1 operation!

Powerful, easy to use! Cuts loose tough, incrusted grime and picks it up (8 to 20 lbs. per min. average) leaves floor clean, smooth and dry.

TENNANT
INDUSTRIAL FLOOR MACHINE

- Eliminates hand scraping, chemicals, soap, water.
- Cuts cleaning costs; is many times faster than other methods . . . does a better job.
- Ideal for ALL types of grime—tar, grease, metal cuttings, paint, etc.
- Self-propelled; easy one man operation.

RUGGED Tennant Floor Machines for 12" or 16" drum accessories. Motors up to 6 h.p. (gas) or 5 h.p. (elec.) REVO-tool at right has hundreds of alloy steel cutters for heavy duty cleaning.

WRITE TODAY *for illustrated bulletins and FACTS about mechanized floor maintenance.*

G. H. TENNANT CO.
2574 North 2nd Street
Minneapolis 11, Minnesota

The way to finer floors **TENNANT** *Floor Maintenance System*

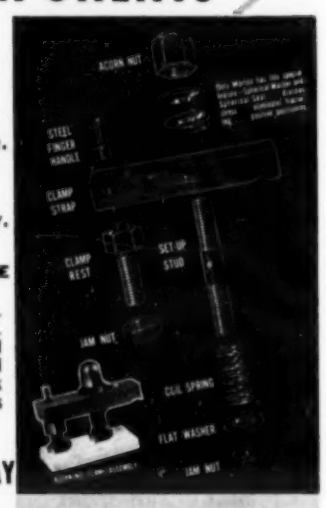
If you write maker identify as IEN - 545

Specify **Morton**
FIXTURE CLAMPS and COMPONENTS

- We stand behind every product we manufacture.
- We assure IMMEDIATE delivery.

DEPENDABLE . . . . DURABLE

Largest assortment in the Industry. Economize . . . use them as standards. All precision made of heat treated selected steel, cadmium plated and corrosion resistant mid-nite black finish. Individual parts on assemblies may be purchased separately.



WRITE TODAY

For Catalog of our complete line. Includes full size tracing templates of each product. Save tooling and designing costs.

MORTON MACHINE WORKS
2421 Walcott St., Detroit 20, Mich.

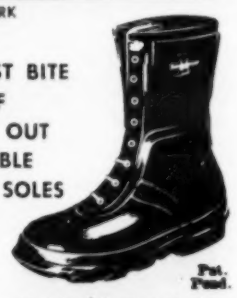
If you write maker identify as IEN - 546

NOW! **KEEP THOSE JOBS GOING, EVEN IN SUB-ZERO COLD!**

COLD WEATHER FOOTWEAR EVERYONE NEEDS OFFERED BY THE CREATORS OF THE FAMOUS KOREAN BOOT—

THERMOBOOT
TRADE MARK

- ABSOLUTE PROTECTION AGAINST FROST BITE
- COMPLETELY WATERPROOF
- WASHABLE — INSIDE AND OUT
- LIGHTWEIGHT, COMFORTABLE
- DURABLE HEELS, CLEATED SOLES
- HEAVY "KICKER" TOE
- U. S. GOV'T TESTED



Pat. Pend.

Speed "outside" jobs by protecting personnel with the boot used by the Armed Forces in the Arctic and Korea. "Moisture barrier" utilizes wool and dead air space to insulate. Cleated sole for sure footing.

Two Models—All First Quality:
F-10 $14.95 PP.
10° Below to 60° Above Zero
SZ-40 $23.95 PP.
40° Below to 60° Above Zero

Available only through
TECHNO EFFICIENCY COUNCIL
9 HANSON PLACE
BROOKLYN 17, N. Y.

ORDER TODAY! Full sizes 5 to 14. Mention width

THE IDEAL FOOTWEAR FOR CONSTRUCTION WORKERS, TELEPHONE AND POWER LINEMEN, RAILROAD MEN, WATCHMEN, TRUCKERS, PIPELINERS, ETC.

If you write maker identify as IEN-547

FLAMEFOIL*

tarps, windbreaks, protective covers,

... *can't Blaze*

RESISTANT to
• FIRE • WATER
• WEATHER • MILDEW

Flamefoil canvas gives extra margin of safety against fire in your plant . . . reduces your losses of time, equipment and materials.

Approved by the Underwriters' Laboratories of the United States and Canada, the Bureau of Standards and Appeals of the City of New York and the California Fire Marshal.

*Manufactured under Patents Nos. 2,044,176 and 2,299,612 . . . . . others pending.

Send For This Booklet

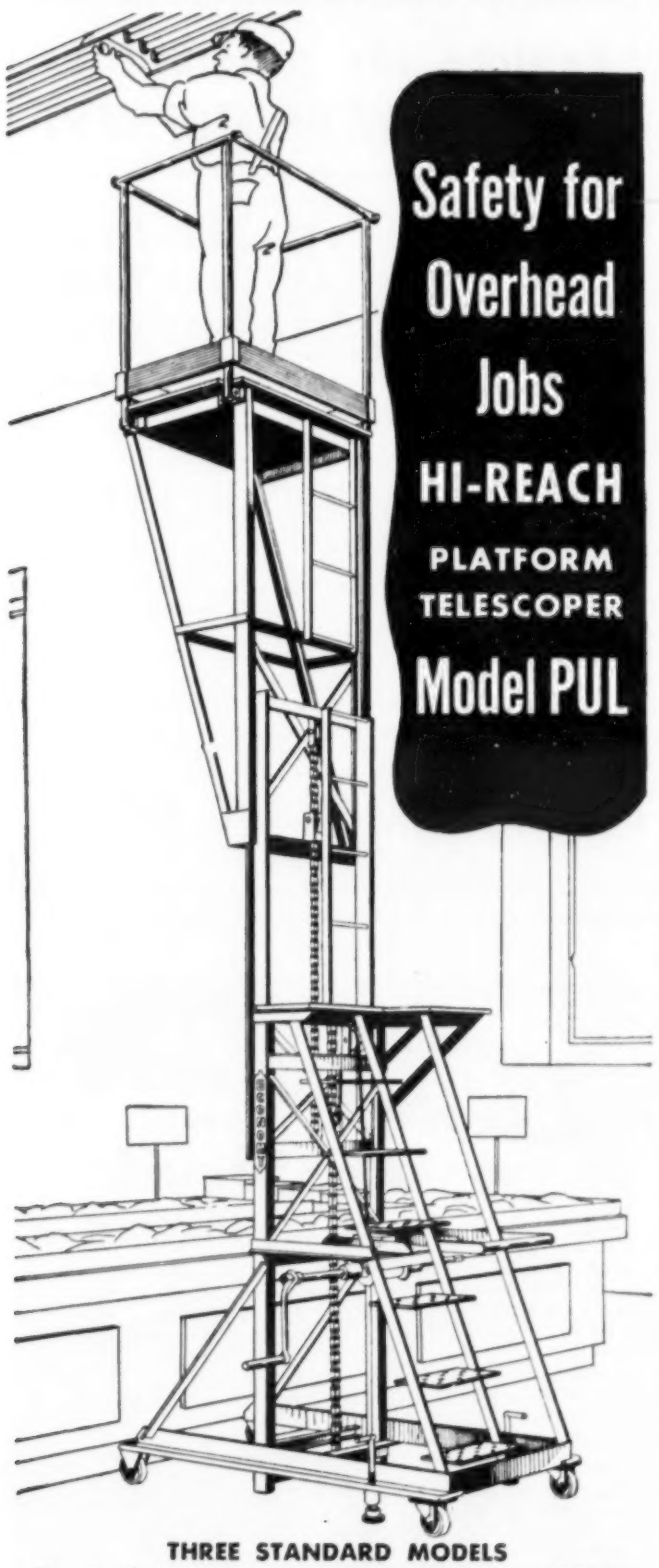
FLAME RESISTANT FABRICS

Their Specifications, Properties and Applications

FLAMEFOIL GUARDSMEN

PHILADELPHIA TEXTILE FINISHERS, Incorporated
102 LAFAYETTE STREET
NORRISTOWN, PA.

If you write maker identify as IEN-548



Safety for Overhead Jobs

HI-REACH PLATFORM TELESCOPER Model PUL

THREE STANDARD MODELS

No. 1—Platform lift 10'9"	$305.00
No. 2—Platform lift 11'9"	315.00
No. 3—Platform lift 15'0"	340.00

Equipped with 5" diameter base wheels
Rubber-tired wheels $8.00 extra
F.O.B. Chicago
Other models with platform lift up to 95'
Write for complete specifications.

ECONOMY ENGINEERING COMPANY
4502 West Lake Street • Chicago 24, Illinois

If you write maker identify as IEN-550

TESTING . . Air conditioned cabinet, adjustable temperature and humidity

Source: FOOD TECHNOLOGY CO.
5921 Northwest Highway, Chicago 31, Ill.

For laboratories

The company announces availability of three designs in its line of air conditioned cabinets, previously described IEN-3575-52. Each is intended for particular requirements and operating conditions in test application.

Model 206CD, previously described, provides a test chamber measuring 21 by 18 by 36 inches. It is suited for a temperature between 40 and 140 deg. F. and humidity range between 30 and 98 per cent in the temperature range named. Control is provided to hold the humidity within 1 degree of wet bulb while temperature is controlled by thermostats that turn the heaters on and off or open and close valves. A wet bulb device atomizes water into a separate chamber through which the air is circulated.

Model 106AHC is similar to Model 206CD. It provides a more limited humidity range, between 70 and 98 per cent, taken at 100 deg. F. It also will hold this humidity within 1 deg. F. wet bulb. Temperature range is from about 10 deg. below room temperature, when city water is used as a coolant, to 140 deg. F. Working space is same as Model 206CD.

Model 206CDR adds a self-contained refrigeration unit to Model 206CD. It also adds three sets of controls to maintain constant temperatures below ambient. In all cases operation is on 110-volt 60-cycle single-phase ac.

If you write maker identify as IEN-551

CLEANING . . Degreasing machine cuts oil and grease from metal parts

Source: DETREX CORP.
14329 Woodrow Wilson, Detroit 32, Mich.

Semi-portable design

Work pieces are suspended in the pure solvent vapor that floats just below the top of this new Type-VS Jr. degreasing machine to dissolve dirt and grease. At the same time the operator directs a spray of hot solvent through a hose line to wash the work. Finally a rinse in pure solvent vapor leaves the work thoroughly clean and dry. Work baskets, racks or hooks can be employed. The machine is suited particularly for shops, laboratories and small manufacturing plants where cleaning requirements call for handling as much as 600 lb. of steel per hour.

Overall height is 48 inches. The interior is coated with a new non-porous corrosion proof material that is not affected by the degreasing solvent. Two designs in the line are heated respectively by electric current or by steam. A condensing ring around the housing, below the top, carries circulating water to establish the vapor level.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 88

If you write maker identify as IEN-552

Betcha we make it!

If it's a *float operated* FEEDER — or a *float operated* SWITCH

IF YOUR product involves a float-operated valve or float-operated switch, chances are we have just what you need to perform the function you require . . . always better and usually at lower cost.

We can give you an almost endless variety of float-operated valves for automatically feeding almost any liquid to maintain levels, supply, make-up, etc. They cover a wide range of working pressures and feeding capacities.

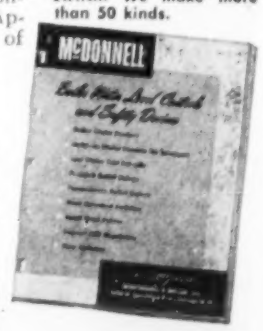
We can also supply an even wider variety of float switches . . . for stopping and starting heat sources; controlling pumps, and so on down the list. We even make explosion-proof types (Underwriters' Approved) for use in the presence of explosive vapors.

The McDonnell catalog lists more than a hundred variants of our products. It's a must to designers of products involving automatic valves or switches.

McDONNELL & MILLER, INC.
3500 N. Spaulding Ave., Chicago 18, Ill.
Doing One Thing Well

A built-in type of liquid feeder. We make more than 30 types.

A built-in type of float switch. We make more than 50 kinds.



ASK FOR CATALOG

If you write maker identify as IEN-553

One ounce of dust distributed over an assembly or inspection bench, or in the wrong place in a ceramic or finishing plant can cost thousands of dollars in rejects or service complaints in the field.

And how little it would cost to provide every assembly and inspection bench with vacuum tools and put automatic dust removing devices on all moving production lines.

You pipe compressed air all over the plant, just like water, gas, electricity. Consider Spencer Vacuum the same way—it's the new tool of industry. You won't be the first to try it in your industry. Bulletin No. 144 shows 132 ways it is cutting costs—improving sanitation. Ask for it.

THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD

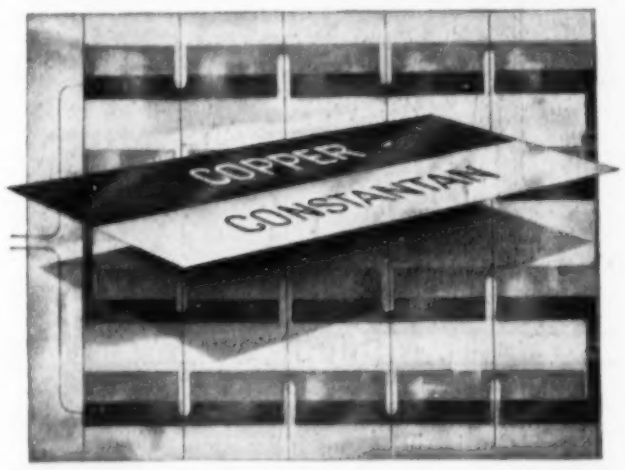
439-Q

If you write maker identify as IEN-554

A PAID NEWS ADVERTISEMENT BY GENERAL PLATE DIVISION

PROBLEM: Manufacture of a Thermopile Calibrated to Measure Heat Exchange Over a Large Area.

SOLUTION: General Plate Provided the Solution with Copper Edge Bonded to Constantan a Composite Metal.



The American Society of Heating and Ventilating Engineers, developing a calorimeter for the measurement of heat exchange between the human body and its surroundings, was faced with the problem of obtaining material for large area thermojunctions.

The heat flow meters used in this calorimeter had to possess characteristics such as uniformity of response of similar meters, stability of calibration and ability to integrate heat flow over the entire area of the meter. A principal factor in their performance was the thermopile material used.

General Plate satisfied these thermopile material requirements with a composite metal — copper edge bonded to constantan and rolled to .002" thick.

No matter what your metal problem, it will pay you to consult with General Plate. Their vast experience in bonding precious metals to base metals, or base to base metals can overcome your problems — often reduce costs.

METALS & CONTROLS CORPORATION
GENERAL PLATE DIVISION
71 Forest Street, Attleboro, Mass.

If you write maker identify as IEN-555

DEBURRS
GRINDS
POLISHES

NEW benchmaster belt sander

write for details!

Ideal for all abrading operations on metals, glass, plastics, rubber, etc! Positive trackage adjustment. No fast wearing auxiliary trackage devices required.

Uses any belt from ¼" to 1" wide by 44" long. Spring or positive belt tension. Speeds up to 8000 S.F.M.

Liquid-proof, dust-proof, double row, double sealed ball bearings in both wheels. Aluminum construction—light weight yet sturdy. Unusually efficient on light, delicate work, yet a husky, small low-cost belt sander!

benchmaster
MANUFACTURING COMPANY
1835 West Rosecrans Avenue
Gardena, California

If you write maker identify as IEN - 556

CAL-WIC WIRE CLOTH

THE RIGHT WEAVE

• • • for every industrial requirement including screening, filtering, grading, cleaning and numerous other types of processing.

THE RIGHT WEIGHT

• • • precision-fabricated for long-lasting dependability and economy.

THE RIGHT METAL

• • • for highest resistance to chemical action, moisture, corrosion, abrasion and extremes of temperature.

For additional information write or phone our nearest sales office.

THE COLORADO FUEL & IRON CORPORATION – Denver, Colorado
THE CALIFORNIA WIRE CLOTH CORPORATION – Oakland, California
WICKWIRE SPENCER STEEL DIVISION – Clinton, Massachusetts

CAL-WIC CFI
INDUSTRIAL SCREENS
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as IEN - 557

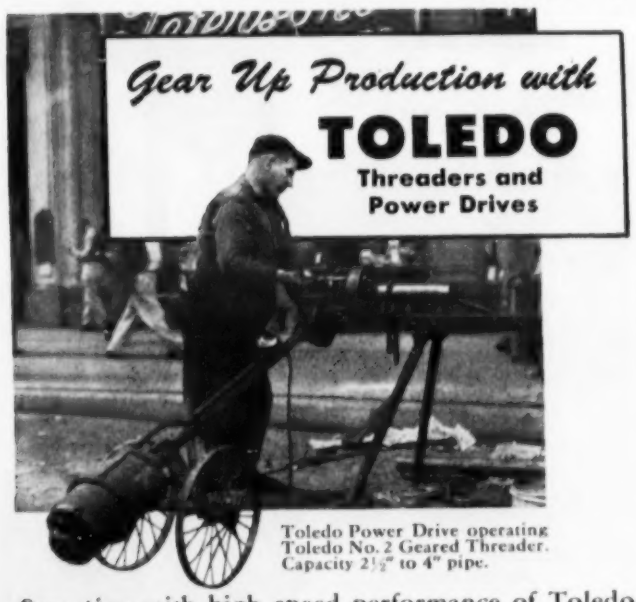
WITH EXTRA CARE, PETE'S PANTS ARE CUT TO ACHIEVE A BREAK AND NOT A JUT

And cutting pipe threads to just the right length means a break for O-B valves. Too many threads allow the pipe to jam the seat before the joint is secure.

Send for free book on valve installation tips.

Ohio Brass VALVES
MANSFIELD . . . OHIO

If you write maker identify as IEN - 558



Toledo Power Drive operating Toledo No. 2 Geared Threader. Capacity 2½" to 4" pipe.

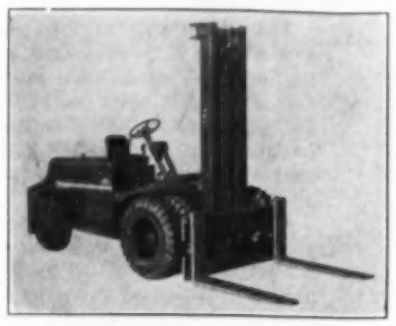
Save time with high speed performance of Toledo Power Drive operating Toledo geared tools! This means *labor saved* and *money saved!* Wherever the job—in shop, plant or in the field—you can reduce pipe fitting costs with Toledo Tools! Precision-built . . . dependable. Order through your supply house. Write for catalog. The Toledo Pipe Threading Machine Co., Toledo, Ohio.

Rely on the Leader **TOLEDO**
PIPE TOOLS . . . POWER PIPE MACHINES . . . POWER DRIVES

If you write maker identify as IEN - 559

TRUCK . . Engine driven fork lift rates 5 ton on 24 in. load centers

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Turning radius 133 inches

Yardlift 100 is a new addition to the company's line of engine driven fork lift trucks. It has been developed particularly for heavy duty service in handling building products and materials involved in substantial outdoor storage. The truck is driven by a 55-hp. Continental engine for speed to about 18 mph.

Standard equipment includes hydraulic steering that is convertible to manual operation, pneumatic tires, twin double acting tilt cylinders, rubber dust boots to protect the cylinder rods, hydraulic brakes on the drive wheels. Overall height is 113 in. with the forks lowered or 178 in. maximum when the forks are raised to 144 in. above the ground.

If you write maker identify as IEN - 560

SWITCH . . Type A safety unit in four ratings from 30 to 200 amperes

Source: TRUMBULL ELECTRIC DEPARTMENT
39-43 Woodford Ave., Dept. M-1, Plainville, Conn.

Heavy duty design

New size, rating 200 amp. on 600 volt ac., has been added to the company's fusible and plain front operated Type HCI safety switches, previously described IEN-1353-50. The previously developed smaller units, rating 30, 60 and 100 amp., also have been improved in design to include a felt gasket that excludes dust and dirt from the NEMA Type 1-A housing.

Arc quenching action is similar to that in modern circuit breakers. Double break visible contacts are projected and withdrawn in piston-like action. Grid pins break the arc, dividing it into a series of small arcs from which heat is dissipated rapidly. The line includes 2, 3 and 4-pole units.

Identify as IEN - 561

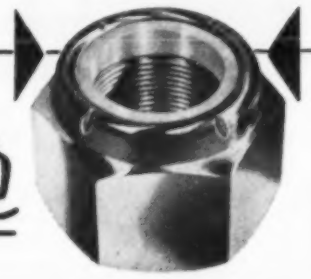
Arthur A. Merrill, an engineer at General Electric, has devised a perpetual calendar. It is completely unlike any calendar now in existence. It is a combination of "key" tabulation and charted months. Guide lines take you to the answer to most any calendar problem.

You can tell the day on which July 4th fell in 1776 when the Declaration of Independence was signed. You can find the day of the week on which you will be one hundred years old. Mr. Merrill will supply single copies to those who ask.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 562

If you write maker identify as IEN - 563



Up-to-date FASTENING INFORMATION

Have the answers at your fingertips before fastener problems arise. Write ESNA for the latest bulletin on self-locking Elastic Stop Nuts. We'll include the AN-ESNA conversion chart.

You'll find Elastic Stop Nuts' positive, vibration-proof protection can cut maintenance costs . . . insure that precise adjustments will hold true. The famous Red Elastic Collar prevents loosening due to vibration, keeps locking threads corrosion-free, provides for accurate bolt loading and seals against liquid seepage along the bolt threads. Elastic Stop Nuts are available in more than 3000 different types and sizes—all self-locking, vibration-proof and reusable.

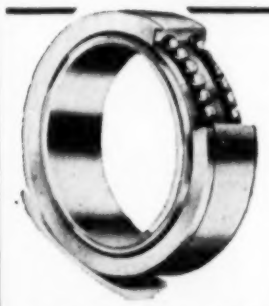
WRITE now for ESNA's help with your present or future fastener problems. Address Dept. N15-153.

ESNA **Elastic Stop Nut Corporation of America**
2330 Vauxhall Road, Union, N. J.

DESIGN HEADQUARTERS FOR SELF-LOCKING FASTENERS

If you write maker identify as IEN - 564

Explore the possibilities of this NEW DEVELOPMENT



. . . . . a series of **ANTI-FRICTION BEARINGS** for use where space is limited . . .

BALL BEARING BUSHINGS

This new series of Double Row (DR-L) Light Ball Bearing provides efficient anti-friction performance within a section height as little as ¼". Ample grease capacity assures long life and eliminates the constant danger of "no lubrication" in the hard-to-get-at places.

Available with bore tolerances made for press fit on selected shafting for shaft rotation; and loose fit on cold rolled shafting for outer race rotation applicaiton.

Send for illustrated literature, sizes and capacities
Consult our engineers on your application problems

SPLIT BALLBEARING CORP.
LEBANON, N. H., U. S. A.

If you write maker identify as IEN - 565

If you write maker identify as IEN - 566

You don't need to bolt machines down!

Put them on Vibra-Mount Felt and SAVE YOUR FLOORS*

In most cases machines placed on Vibra-Mount Felt do not need to be bolted down. The strong Vibra-Mount adhesive between felt and floor and felt and machine holds firmly, preventing "walking." This method of mounting is simple, fast, and inexpensive. And there is a great big plus value in reduction of vibration, as much as 85%! Save your floors, lessen machine down-time, stop shaking employees and machines. When installing new machines or relocating your present equipment, use Vibra-Mount Felt. Simple details and further information will be found in the booklet "How to Reduce Vibration." Write for it on your company letterhead.

*T. M. Reg

American Felt Company
TRADE MARK
GENERAL OFFICES:
18 GLENVILLE ROAD, GLENVILLE, CONN.

If you write maker identify as IEN - 567

first* IN INTERIOR FIRE PROTECTION

ALLENCO

OFFERS

PROMPT DELIVERY
WIDE SELECTION
TOP QUALITY

FIRE EXTINGUISHERS and SUPPLIES

Approvd for fires of Class A, A1, B, B1, C, C1—soda-acid, foam, V/L, pump, gas—several sizes and finishes, also cabinets

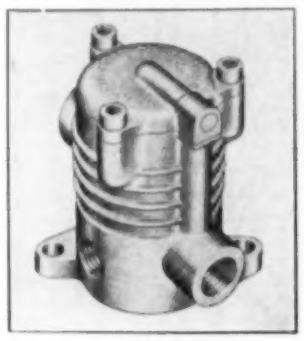
*Voted 1st by engineers, architects, contractors, distributors; most widely used. Also complete line of hose fittings for all purposes. Write for catalog or consulting service.

Established 1887
W. D. ALLEN Manufacturing Co.
CHICAGO 6 · NEW YORK 7

If you write maker identify as IEN - 569

VALVE . . Solenoid operated, two and three way, sizes to 1/4 inch

Source: VALVAIR CORP.
949 Beardsley Ave., Akron 11, Ohio



About $13

New valve, for pilot duty, is available in normally open or normally closed design. Its solenoid coil is subject to specification for standard electrical characteristics. The valve can be supplied with any of three orifices measuring 1/16, 3/32 and 1/8 inch. Each is threaded at the ports for 1/4-in. pipe connection.

Air pressure or vacuum, oil, water and inert gases can be handled. The valve can be drilled through the bottom for manifold assembly. Body and cover are made of zinc base die cast alloy. The coil is sealed from the fluid stream but is cooled by the fluid. Sealing is by Hycar O-rings within the housing.

If you write maker identify as IEN - 570

CORROSION PROOFING . . Neoprene coating for metals in corrosive service

Source: EARL PAINT CORP.
238-42 Genesee St., Utica 2, N. Y.

Patches readily

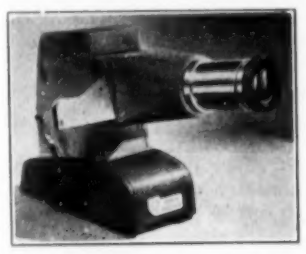
Erkoprene 900 is a new liquid material based upon Neoprene synthetic rubber. The material is self-vulcanizing and is inert to attack by acids with the exception of nitric and chromic types. It will stand up in service in contact with sulphuric acid in concentrations below 50 per cent.

Typical applications are in protective linings for tanks handling acids and corrosive chemicals, for impellers, mixers, fan blades, pipes, pump bodies and to protect structural members subject to splash or spray. The material adheres to aluminum, bronze, steel surfaces.

If you write maker identify as IEN - 571

PROJECTING . . Color slide unit with blower cooled lamp house

Source: AMERICAN OPTICAL CO.
78-82 Heard St., Chelsea 50, Mass.



Portable assembly

Reviewer 500 is a new projector for 2¼ or 2-in. square slides. The slides are protected against over-heating by a motor driven ventilating blower. This blower cools the lamp housing, the slide and the condensing elements.

The light source is a 500-watt lamp that operates in connection with a four element condensing assembly that includes the company's patented heat absorbing glass. The objective can be either a 5-in. or a 7-in. Americote unit, f/3.75 or f/3.65. The slide changer centers the slide in the optical path.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 572

FREE SAMPLE KIT PROVES BIG TIME SAVINGS!

SEMS-by-SHAKEPROOF

Tedious separate lock washer handling is completely eliminated. Specially designed SHAKEPROOF* Lock Washers are pre-assembled to screws—two parts are handled as one! Held on by the rolled thread, the washer can't drop off!

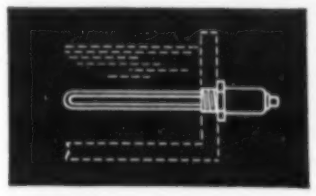
SEND FOR FREE TEST KIT NOW!

*T. M. REG. U. S. PAT. OFF.

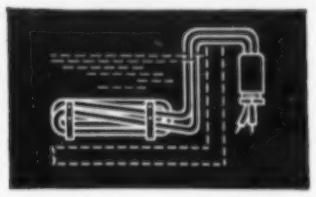
SHAKEPROOF inc.
"Fastening Headquarters"
TRADE MARK
A DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois

If you write maker identify as IEN - 573

High-speed, easily-installed LIQUID HEATING with G-E Calrod* immersion heaters



Accurately-controlled G-E heaters are available in a wide range of sizes, shapes, ratings and sheath materials for "screw-in" or . . .



"over-the-side" installation. Thermostatic control will assure you of accurate temperatures and minimum power consumption.

ACCURATE HEATING of water, oil, plating baths, and other liquids is *easy* with Calrod heaters. Immerse them *directly in the liquid* for maximum heat transfer with minimum heat losses.

FREE BULLETINS, GEA-5545, "Handy Selector Guide for Calculating Your Own Heating Requirements—Complete Catalog of Heaters and Devices, GEC-1005—and "Heating Liquids with Electric Heaters," GEA-5077, will help you select and apply the heaters best suited to your jobs. Write Sect. 720-65, General Electric Co., Schenectady, N. Y.

* Registered Trademark

GENERAL ELECTRIC
720-65

If you write maker identify as IEN - 574

Amazing New Time Saver

Runs, sets, loosens and removes nuts or studs, threads, taps, drives screws

Millers Falls No. 555 Impact Tool

Standard ½-inch square drive — wide variety of accessories

Sleek, powerful, compact — this new No. 555 is the most remarkable, most versatile electric tool ever developed for production, service and maintenance work. When torque resistance is low, it drives continuously at 1900 r.p.m. Then, automatically shifts to impact action—with 2000 blows per minute exerting up to 100 ft. lbs. torque. Weighs only 6¾ lbs. Rugged and easy to use. Quickly reversible. On many operations, it cuts time up to 90%.

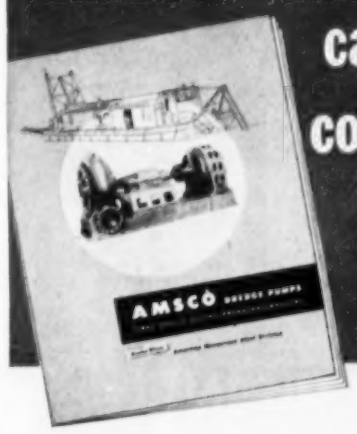
Millers Falls Co., Dept. P, Greenfield, Mass.

SEND FOR BULLETIN 564

MILLERS FALLS TOOLS
SINCE 1868
The Mark of Superiority

If you write maker identify as IEN - 575

This book on AMSCO DREDGE PUMPS can help cut costs in your Dredging Operations



More and more operators are turning to Amsco Dredge Pumps made with manganese steel—"the toughest steel known" in order to save time, money, and materials in their dredging operations.

This book tells you where the real savings can be made and how you can make them. Write for booklet 1052-P.

AMERICAN Brake Shoe COMPANY
AMERICAN MANGANESE STEEL DIVISION
415 EAST 14th STREET • CHICAGO HEIGHTS, ILL

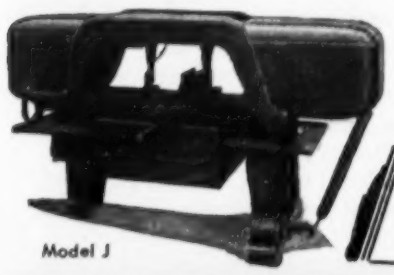
If you write maker identify as IEN - 576

EXTRA SPEED..!

Save time, eliminate production slow-up and reduce labor costs by using this highly efficient metal cut-off band saw. It has extra speed through its extreme rigidity and saw support, allowing more feet per minute in saw travel. The set-up is quick, the cutting action continuous. It's accurate, insuring square true cuts. Operates and shuts off automatically. Model J, 10" x 18" capacity.

Also JUNIOR MODEL B, 5" x 10" capacity.

JOHNSON METAL CUT-OFF BAND SAW

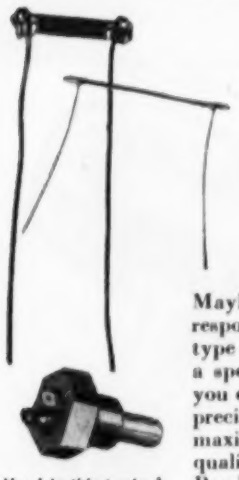


Model J

Write for CATALOG!

JOHNSON MANUFACTURING CORP.
ALBION, MICHIGAN

If you write maker identify as IEN - 577



Used in this typical application for sensing temperature of hydraulic oil.

precision-made to your needs . . . BENDIX-FRIEZ thermistors

Maybe your need for these temperature responsive resistors can be satisfied by a type we carry in stock. Maybe you require a specially-developed type. In either case, you can depend on Bendix-Friez to provide precision-made thermistors to serve you with maximum efficiency. High standards of quality control in manufacture make Bendix-Friez Thermistors pre-eminent in their field—assure you of utmost satisfaction.

STANDARD TYPES FOR IMMEDIATE DELIVERY

Size (inches)	@ +30°C.	@ 0°C.	@ −30°C.
.140 x .75	45.0 ohms	86 ohms	194 ohms
.040 x 1.5	12,250 ohms	26,200 ohms	65,340 ohms
.018 x 1.5	35,000 ohms	82,290 ohms	229,600 ohms

Write for details.

FRIEZ INSTRUMENT DIVISION of Bendix AVIATION CORPORATION
1428 Taylor Avenue, BALTIMORE 4, MARYLAND
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

If you write maker identify as IEN - 578

Send NOW!

Invitation to Design Engineers

Get complete, concise engineering data showing how easily SYNCHRON timing motors and time machines may be applied to timing mechanisms now in production or still in the idea stage. Many practical advantages! Send coupon.

Pulls up to 8 oz. direct load at 1 R.P.M. Operates efficiently at -40° to +140°F. Available with gear trains to convert any speed.

SYNCHRON® timing motors

HANSEN MANUFACTURING CO., INC., PRINCETON 2, INDIANA
Send catalog and engineering data to:

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

IDEAS FOR YOU

Items of particular interest in the news other than straight new products, development pointing toward the future, unusual procedure to accomplish a point, suggestions for practical action, each to provide ideas for you.

Identify as IEN - 579

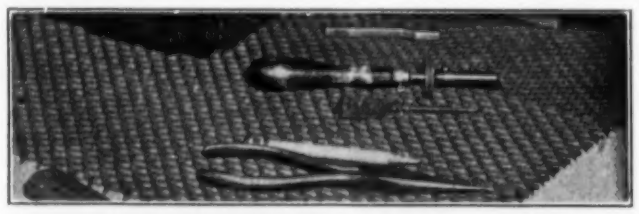
Carbon dioxide in liquid form is delivered through a nozzle to cool a tool grinding operation and also to keep the tool

cool while it is cutting. Application can be made on tool grinders, lathes, milling, threading, boring, drilling and broaching machines. The liquid is directed into patterns such as cone, fan, pin point with pressure at about 850 lb. at 70-deg. ambient temperature.

It absorbs heat rapidly and thoroughly. The liquid can be stored in cylinders for delivery through siphon tubes. Bulk supplies for central installation are available also and, for limited production, liquefiers can be supplied to charge with dry ice. Your name will be added to the Pure Carbonic Company's list to receive current literature on the whole subject.

Identify as IEN - 580

Instruments are protected against damage during assembly and delicate tools can be set down without need for particu-



lar care to maintain adjustments when the work table is covered by a new Neoprene rubber mesh resembling expanded metal lath. It is known as Neotex and is made by Research Products Corporation. It is available in green, black, red and yellow in rolls measuring 26 in. in width by 50 ft. in length. Ordinary scissors are used to cut it to any desired shape. Small parts that fall between the webbing can be recovered at the end of a day's work. Previously workers brushed such parts to the floor to get them out of the way.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 581

If you write maker identify as IEN - 582

If you write maker identify as IEN - 583

Special U-clamps made on a DAKE press with this low cost fixture

A few pieces of scrap steel, cut to size and welded, became the die with which this machinist forms U-clamps on his Dake Hydraulic Press.

He is Gerald Denicola, who operates the Marmora Machine Co. of Chicago. One of his customers orders these clamps 100 at a time, three or four times a year.

When he learned that there would be repeat orders for them, he rigged up the fixture shown above at a cost of less than $15. It paid for itself on the first run, and since then has paid "dividends" regularly every three or four months.

If you are hammering out jobs the *hard* way, imagine how much work and money you could save by doing them with a Dake Hydraulic Press. Hand, air, or electrically operated Dake Presses with capacities ranging from 25 to 300 tons are suitable for thousands of production and maintenance jobs. They are fully described in illustrated Catalog 129 —write for a copy, today.

DAKE PRESSES

DAKE ENGINE COMPANY
614 Seventh St.
Grand Haven, Mich.

Arbor Presses · Hand-Operated Hydraulic · Power-Operated Hydraulic · Guided Platen · Gap Type Presses · Movable Frame

If you write maker identify as **IEN - 585**

This groove simplifies many materials-handling problems

Where loads move frequently in the same direction, Bassick Casters with "V" grooved wheels often provide easier, faster, smoother controlled movement. Grooved-wheel casters are designed to roll on inverted angle iron track, or in direct contact with the floor.

They are ideal for assembly lines. The angle track is inexpensive, easily installed, and self-cleaning.

Bassick Grooved-Wheel Casters are available in 4, 6, 8, and 10 in. sizes, swivel and rigid. Write for full information. THE BASSICK COMPANY, Bridgeport 2, Conn. *In Canada:* Belleville, Ont.

Bassick A DIVISION OF STEWART SW WARNER

MAKING MORE KINDS OF CASTERS... MAKING CASTERS DO MORE

If you write maker identify as **IEN - 586**

Here's the Answer to BULK MATERIAL HANDLING PROBLEMS

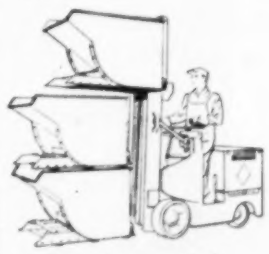
Phillips "Skid-Dump"

Bulk materials of all kinds are handled with maximum efficiency at minimum cost . . . with the Model F-1 "Skid-Dump. Used with pallet or fork lift truck, it automatically dumps and returns to original position. Smooth, rolled edges of 3/16" steel plate, welded undercarriage provide safety, long-life, strength and durability. Capacity—1 cu. yd.

Write for Bulletin E-15

Heaviest materials easily handled with pallet truck.

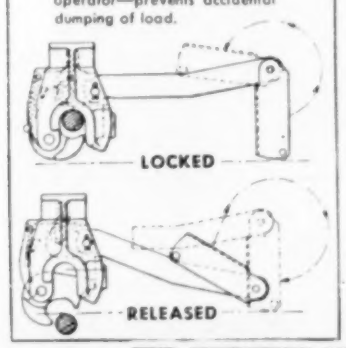
Automatically dumps materials, returns and locks in original position.



Conveniently stacked, empty or full.

New Safety Lock*

Provides maximum safety for operator—prevents accidental dumping of load.



MANUFACTURERS SINCE 1863 **PHILLIPS** MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

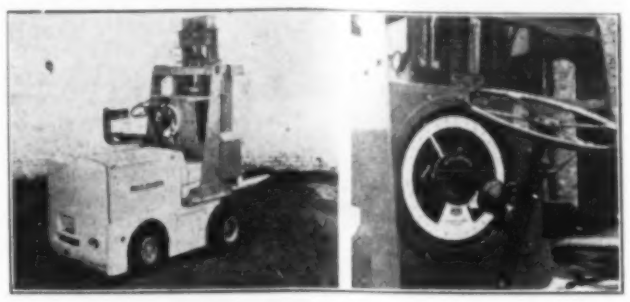
MATERIALS HANDLING EQUIPMENT

2500 JANE STREET • PITTSBURGH 3, PA.

IDEAS FOR YOU—Continued

Identify as **IEN - 588**

Weighing scale, hydraulically operated, for built-in application on industrial trucks, has been developed in England

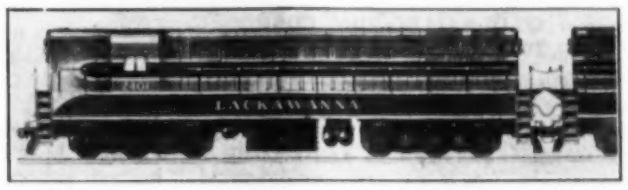


and patented by Wheelersmith Ltd. The company recently demonstrated in New York City. It now has a representative there to talk with manufacturers interested in taking over the production and sales rights for the United States, Canada and South America.

The scale structure mounts on the truck between the front end and the uprights for the lift forks. It goes into action when the truck operator depresses a foot control to take the fork load on a pair of small hydraulic cylinders and indicate weight on an illuminated dial in front of the operator. Tare can be set on the dial. Shock loading has no effect.

Identify as **IEN - 589**

Train Master names the diesel locomotive that soon you will be seeing at the head end of passenger and freight trains. It



is a Fairbanks-Morse design with the company's 2,400 hp. engine and six driving motors on its two six wheel trucks. First ten will be on the Lackawanna between New York and Buffalo. The company has published an interesting illustrated booklet with the title, "Train Master."

Identify as **IEN - 590**

Easy on and easy off is the order when the press fit is assisted by oil pressure in application and removal of big bearing inner races and compression couplings. SKF Industries developed the idea and applied for patent in 1943. Many installations have been made since. Each employs a hand operated pump to build oil pressure as high as 25,000 lb. and suitable oil passages through which the oil can be introduced between shaft and race or press-fit collar. Pressure application establishes an oil film for "easy on" or "easy off."

Identify as **IEN - 591**

Mini-Breaker, the plug-in circuit breaker that we described in IEN-9449-52 to thread into a standard screw base fuse receptacle, is now listed as a Circuit Protector by Underwriters' Laboratories Inc. It bears the label as an inspected device and is suited for application in main and branch circuits rating 15, 20 and 30 amp. on 110-volt ac. When a circuit "blows" and you have corrected the fault you just press a button on the breaker and the circuit is reclosed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

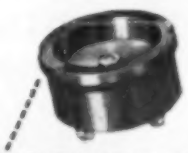
If you write maker identify as **IEN - 592**

metal, plastic, wood, rubber or leather products, there's a specific Jewel Brand Abrasive Belt made to help you do the job better . . . faster . . . and at a lower cost. Let an experienced Jewel Brand Abrasive Engineer help you select the *right* one. Write today for complete details. Abrasive Products, Inc., 525 Pearl St., South Braintree 85, Mass.

Jewel Brand COATED Abrasives

If you write maker identify as **IEN - 593**

KLIXON PROTECTORS



Prevent Motor Burnouts in National Disposers

The National Disposer, manufactured by the National Rubber Machinery Company, takes the garbage problem right out of the housewife's hands. It is quick and easy to install in all sinks, easy to service when necessary and exceptionally safe.

To safeguard the motor against possible burnouts, National engineers incorporated a built-in Klixon Protector. The reason, their experience proves that Klixon Protectors can be depended upon to provide positive protection and help extend the life of the motor.

Should the motor become dangerously overheated due to overloads, stalled rotor or other causes, the Klixon Protector snaps the power "off." When it cools sufficiently, the Protector snaps the power "on."

You, too, can keep motors in your equipment operating, reduce service calls and repairs by specifying and using Klixon protected motors. The additional cost is low, pays for itself over and over by reducing motor burnouts.

SPENCER THERMOSTAT
Division of Metals & Controls Corporation
201 FOREST ST., ATTLEBORO, MASS.

KLIXON

If you write maker identify as **IEN - 594**

SUB-MINIATURE PILOT LIGHTS *Approved* for AIRCRAFT

AND IMPROVED IN IMPORTANT DETAILS

DIALCO

A great aid to your miniaturization program

SUB-MINIATURE INDICATOR ASSEMBLIES

ACTUAL SIZE

NON-DIMMING
No. 8-1930-621

MOUNT IN 15/32" HOLE
ALL LENS COLORS

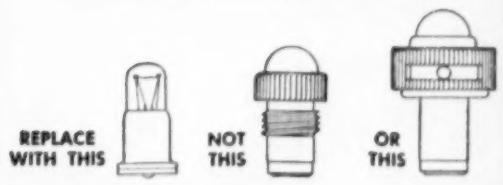
Easy lamp replacement with any midget flanged base lamp types

Complete blackout or semi-blackout dimmer types

ACTUAL SIZE

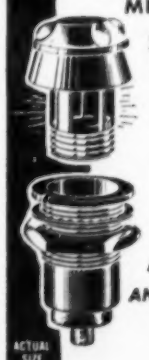
MECHANICAL DIMMER
No. 11-1930-621

THESE ASSEMBLIES LOGICALLY REPLACE LAMPS NO. 319, 320, and 321



PLASTIC PLATE (EDGE) LIGHT ASSEMBLIES

AIR FORCE and BUREAU of AERONAUTICS
MIL-L-7806 DRAWING MS-25010



ACTUAL SIZE

DIALCO *No. TT-51* (Red filter-black top) or, *No. TT-51A*, complete with No. 327 Lamp

ALSO MADE
with other filter colors and with *light-emitting top* (for indication)

ALL OF THE ASSEMBLIES ILLUSTRATED ACCOMMODATE LAMPS NOS. 327, 328, 330, and 331.

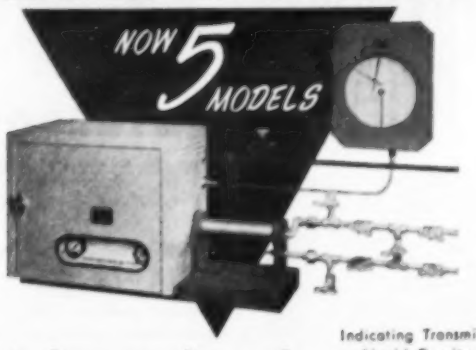
ANY ASSEMBLY AVAILABLE COMPLETE WITH LAMP

SAMPLES ON REQUEST—NO CHARGE

Foremost Manufacturer of Pilot Lights
DIALIGHT CORPORATION
60 STEWART AVENUE, BROOKLYN 37, N. Y. HYACINTH 7-7600

If you write maker identify as IEN - 596

LIQUID GRAVITOMETER



Indicating Transmitting Liquid Gravitometer

. . . for pipelines, gasoline and chemical plants, refineries, etc.

Ruggedly built for hard field use but with laboratory accuracy, the long accepted ARCCO-Anubis Liquid Gravitometer with all its splendid features is now available for recording, controlling, indicating, transmitting, or various combinations of these functions. Write us fully about your application and request Bulletin No. 111 Revised.

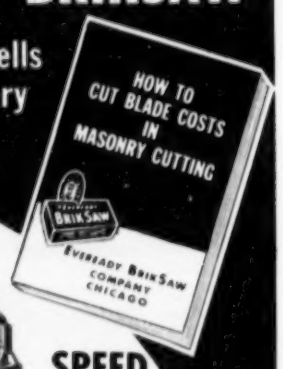
1. RECORDING LIQUID.
2. INDICATING TRANSMITTING.
3. INDICATING CONTROLLING.
4. RECORDING TRANSMITTING.
5. RECORDING CONTROLLING.

AMERICAN RECORDING CHART CO.
3113 E. 11th St. • Los Angeles 23, Calif.

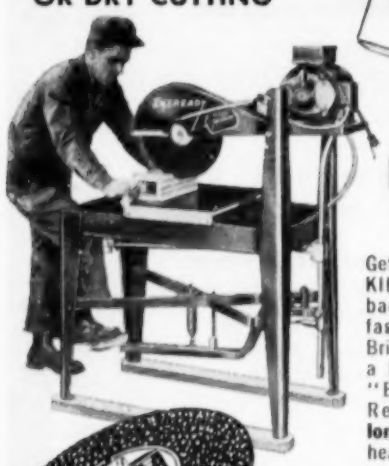
If you write maker identify as IEN - 597

Get More Heats Per Lining with EVEREADY BRIKSAW

This FREE BOOK Tells How to Cut Any Masonry Material in SECONDS!

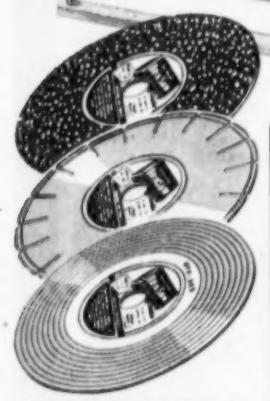


WET *(DUSTLESS)* OR DRY CUTTING

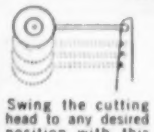


SPEED REPAIR WORK

Get that FURNACE—KILN—OR BOILER back in operation fast! Cut **any** Fire Brick in **seconds** with a BRIKSAW . . . and "BRIKSAW CUT" Reline Jobs **last longer** — give more heats.



EXCLUSIVE EVEREADY BRIKSAW FEATURES



"Adjusta-Height" lets cutting head change elevation for materials of varying thickness . . . adjusts in 4 seconds.

Swing the cutting head to any desired position with this "Toe-Matic" foot treadle. Fast shift from one type of masonry material to another.

One-piece cutting head for immediate, easy portability. Off the saw frame in 21 seconds flat!

Automatic pressure control for the blade. Adjusts cutting pressure to hardness or softness of material.

EVEREADY
- ABRASIVE
- DIAMOND
- "TUFFIE"

BLADES

Your local Distributor carries EVEREADY Blades to best cut any masonry or fire brick material . . . for every make and model Masonry Saw. Order your EVEREADY Blades from local stocks.

CUT Special Shapes—
SKEWS—SPLITS—ANGLES
from Standard Shapes

Any shape, any size . . . **cut in SECONDS** from Standard Refractory stocks or from culls you formerly discarded. Cut to precision sizes . . . do a better, faster job of relining. **Save** Material . . . **Save** Time . . . **Save** Money!

WRITE FOR NAME OF NEAREST DEALER

There's an EVEREADY DISTRIBUTOR IN YOUR LOCALITY Write for His Name Now!

EVEREADY BRIKSAW COMPANY
1509A S. Michigan Blvd., Chicago 5, Ill.

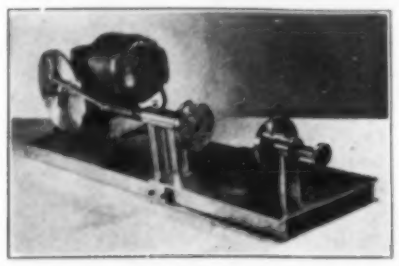
Send without obligation of any kind FREE Booklet on "HOW TO CUT BLADE COSTS IN MASONRY CUTTING"

NAME_____
ADDRESS_____
CITY_____ STATE_____
No. EI-13

If you write maker identify as IEN - 599

TESTING . . Flexing machine tests vapor barrier packaging paper

Source: PACKAGE MATERIALS LABORATORIES INC.
459-63 Crescent Road, Hatboro 10, Pa.



List is $375

A sheet of vapor barrier paper is formed into a cylinder between the two heads of this new Gelbo tester and the geared head driving motor is started. This motor drives a crank to reciprocate the spindle at one side of the testing head. A cam track on the spindle produces rotating action. Both twisting and crushing are imposed upon the paper to simulate conditions incident to handling.

The paper can be evaluated for its water vapor permeability, gas transmission, appearance of pinholes and physical damage after repeated flexing for a pre-determined number of cycles. The action closely duplicates the damaging effect of handling the barrier materials in making up a package. It can be employed in evaluation of flexible sheet materials for any purpose that must withstand repeated flexing.

If you write maker identify as IEN - 600

BEARING . . Double row ball design for light duty in limited space

Source: SPLIT BALLBEARING CORP.
209-13 Mechanic St., Dept. IEN, Lebanon, N. H.

Ball Bearing Bushing

Type DR-L is a new double row ball bearing with a full complement of balls in factory lubricated sealed assembly. It is complete in a ¼ in. radial section for application in limited space. Outside diameter ranges from 1.000 to 3.125 inches. Overall width is 0.625 in the first eleven sizes. It is 0.750 in. in the remaining seven. Two ball sizes are ⅛ and 5/32 inch.

The smallest bearing is suited for operation at a maximum speed of 1,850 rpm. and maximum radial load of 795 pounds. The largest bearing operates to 450 rpm. with maximum radial load at 3,860 pounds. The bearing can be specified for slip or press fit. Both types will carry thrust and radial load in applications such as sheaves, idlers, oscillating mechanisms, fulcrums, cams and shafts operating at moderate speeds.

Identify as IEN - 601

A valve was needed for a vending machine, one that would measure and dispense milk, one that could be made a part of the supply container, to be thrown away when the container became empty, one that would meet all sanitary requirements. Worcester Moulded Products came up with the answer by molding the valve using polyethylene plastic. It fits a standard 40-quart milk can.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 602

Save Valuable Cutting Tools WITH WEBBER INDUSTRIAL FREEZERS

TRADE MARK REGISTERED

★ By the treatment of cutting tools in temperatures to —125°F., in Webber Industrial Freezers, plant supervisors in many of America's large industrial plants report that tool life has been increased as much as 490%. Much less set up time is required because tools last longer. Tools received from the manufacturer a trifle undersized are saved by cold treatment and extended tool life on extremely difficult jobs which a tool formerly served for only one cut has been materially increased. By the stabilizing of metals at —125°F., a permanent accuracy and stability which would be impossible otherwise is accomplished. This treatment performs in a matter of hours the equivalent of four to eight years of natural aging. There's a Webber Unit for every industrial need.

Write for new bulletin giving more complete information.

INDUSTRIAL FREEZER DIVISION
WEBBER APPLIANCE CO., INC.
8-2740 MADISON AVENUE • INDIANAPOLIS 3, INDIANA

If you write maker identify as IEN - 603

FOR *Strictly* IMPERSONAL INSPECTION CHOOSE AMES DIAL COMPARATORS

Ames Dial Comparators make the inspection of duplicate parts an extremely simple, rapid and accurate operation. Ames Comparators are strictly impersonal in their accuracy – the results being in no way dependent on the skill or judgment of the operator. The pressure of the gauging members against the work is mechanically determined and therefore uniform.

Check the Ames Dial Comparators shown – one of them may solve a Quality Control problem for you.

Ames No. 1 is an easily adjustable bench model dial comparator that measures objects up to 2" in cross section. This comparator is designated *Ames No. 1W* when equipped with a dead-weight and contact to ASTM specifications for measuring resilient materials.

Ames No. 2 is a compact bench model dial comparator for measuring sheet metal, glass, hard rubber. *Ames No. 2W* is similar, but is furnished with dead-weights and contacts to ASTM specifications for checking textiles, plastics, sheet rubber, etc.

Ames No. 13 features flat-ground, cast-iron base of ample size for using V-blocks and locating fixtures. The No. 13 can be fitted with a fine adjustment for close setting. Adjustable bracket holds any Ames Indicator.

Ames No. 130 is designed especially for inspecting comparatively large and odd-shaped parts. For this reason, the flat-ground steel base, the adjustable indicator support, and the upright column are proportioned to the user's requirements.

Send us your Quality Control job specifications, and we will supply complete details and proposal without obligation.

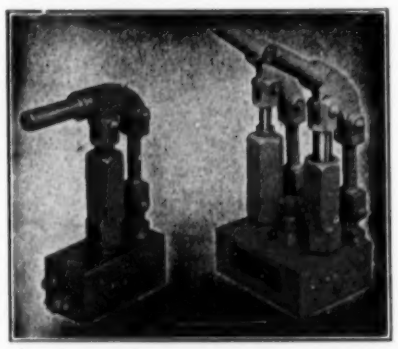
B. C. AMES CO. 53 Ames Street, Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

If you write maker identify as IEN - 604

HAND HYDRAULIC PUMP

Single and Double Designs

To 20,000 P. S. I.



Interchangeable Pistons ⅜-½-¾ inch

★

Integral Release Valve

★

Dual Pump Unit Reservoir 360 Cu. in.

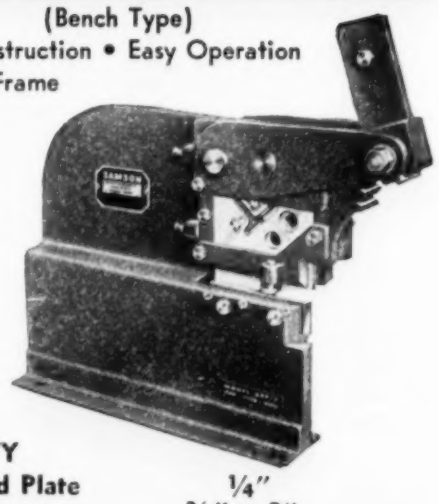
Pressure range is 3,000 to 20,000 P.S.I. Pipe connections ¼" N.P.T. Handle length is 18 inches. Weight is 8 to 18 pounds. Unit can be bolted or welded into position. We specialize in hand pump units to operate in temperatures form minus 65 F. to 160 F. and with any capacity reservoirs required.

WILLIAM S. PINE
1637 E. 22nd St., Los Angeles 11, Calif.

If you write maker identify as IEN - 605

SAMSON PLATE, ANGLE and BAR SHEAR

(Bench Type)
- All Steel Construction • Easy Operation
- Unbreakable Frame



NEW No. 5RP7

$179.00

f.o.b. New York (subject to change)

IMMEDIATE SHIPMENT

CAPACITY	
Sheets and Plate	¼"
Flats	⅜" x 3"
Rounds	⅝"
Squares	½"
Angles and Tees	2" x 2" x 3/16"

Catalogue of Metal Working Equipment furnished on request.

JULIUS BLUM & CO., Inc.
Established 1910
540A West 22nd St., New York 11 • WAtkins 9-7042

If you write maker identify as **IEN - 606**

WICKWIRE ROPE SLINGS

tough...strong...extra flexible

Wickwire Rope Slings are offered in both braided and conventional types . . . are designed to hitch on to heaviest loads with utmost safety, ease of handling and absolute security of attachments. Where extreme flexibility is required, Wickwire Slings of braided design give definite advantages in non-kinking qualities and in their ability to handle materials of all types and shapes without taking a permanent set.

Let us know your requirements. Our engineers will be pleased to analyze your sling problems and recommend the correct solution.

THE COLORADO FUEL AND IRON CORPORATION – Abilene (Tex.)
Denver • Houston • Odessa (Tex.) • Phoenix • Salt Lake City • Tulsa
THE CALIFORNIA WIRE CLOTH CORPORATION – Los Angeles
Oakland • Portland • San Francisco • Seattle • Spokane
WICKWIRE SPENCER STEEL DIVISION–Boston • Buffalo • Chattanooga
Chicago • Detroit • Emlenton (Pa.) • New York • Philadelphia

WICKWIRE ROPE
PRODUCT OF WICKWIRE SPENCER STEEL DIVISION
THE COLORADO FUEL AND IRON CORPORATION

If you write maker identify as **IEN - 607**

Making a one-ton load ...a one-man job

on Westinghouse Switchgear

WINSMITH SPEED REDUCERS

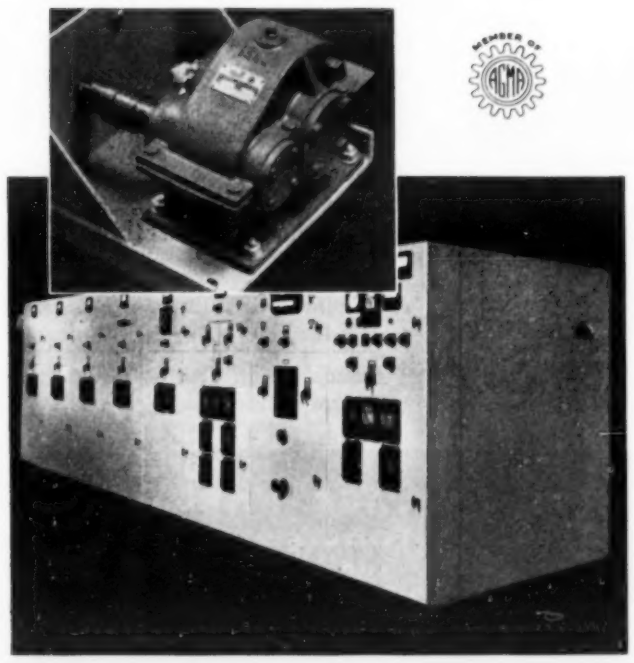
Even though it weighs a ton, when the oil circuit breaker on Westinghouse "Unitized" Heavy Duty Switchgear is removed periodically for inspection, it's only a one-man job. A power-elevating mechanism lowers the breaker onto a hand truck and lifts it back to operating position in about 3 minutes.

Heart of the elevating device is a motor-driven Winsmith Helical Gear Speed Reducer, with an input of ¾ hp at 1725 rpm and a reduction ratio of 9.5 to 1, which operates 4 shaft-connected screw-lifts via a drive chain. Like all components of 100% standardized Westinghouse Switchgear, the Winsmith reducer is itself a product of complete standardization.

Whether your power transmission requirements are intermittent like this switchgear, or continuous . . . heavy duty or light . . . Winsmith is the *only* name in speed reducers you need remember. Standardized worm, helical and patented differential gear units are available to serve your specific needs throughout the 1/100 to 85 hp range, in ratios from 1.1:1 to 50,000:1. *Request Catalog 148 for details.*

WINSMITH, INC.
10 Davis Street • Springville (Erie County), N. Y.

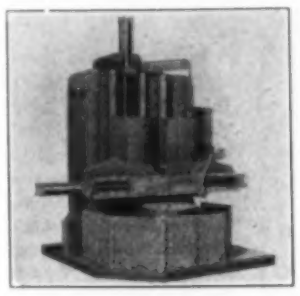
MEMBER OF AGMA



If you write maker identify as **IEN - 609**

MACHINING . . Contouring machine to bore, turn, face, groove, rabbet

Source: EX-CELL-O CORP.
1202 Oakman Blvd., Detroit 32, Mich.



Ask for Bulletin F-735

A tracer is carried on the horizontal member of the right hand compound slide of this new Style 426-A vertical precision contouring machine. It governs both vertical and horizontal movements in contouring operations. The tracer finger follows the outline on a hardened and ground flat steel template. Both vertical and horizontal members of the contouring slide are operated through lead screws driven by individual variable speed motors. Actuation is through an electronic control so the feed rate per revolution remains constant independent of variation in the contour or the table speed.

The left hand compound slide consists of a vertical slide supporting a horizontal tool slide, both of which are operated by hydraulic cylinders. The vertical slide provides feed for turning, boring, rabbeting. Facing and grooving are accomplished during the feed stroke of the horizontal slide. Seven automatic cycles can be set up with left hand compound slide.

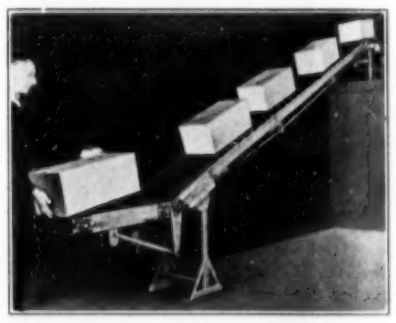
The rotating work table measures 36 in. in diameter and provides for 42-in. maximum work swing. Spindle speeds are 32 to 500 rpm. for the left hand compound slide. They are selected by a rheostat. Range for the right hand compound slide is 300 to 1,200 fpm., the speed varying automatically, within the motor range, to maintain the selected surface speed. The main driving motor is a 25-hp. unit with variable speed range between 400 and 1,600 rpm.

Vertical stroke on the left hand compound slide, which is operated hydraulically, measures 24 inches. Horizontal stroke is 20 inches. Rapid traverse is 10 fpm. The vertical stroke is 24 in. also on the right hand compound slide with horizontal stroke at 24 in., rapid traverse at 10 fpm. and feed range variable between 0.002 and 0.050 in. per revolution. Required floor space is 190 by 132 inches. Overall height is 158 inches.

If you write maker identify as **IEN - 610**

CONVEYING . . Reversible belt unit to carry work between two floors

Source: MECHANICAL HANDLING SYSTEMS INC.
4605 Nancy Ave., Detroit 12, Mich.



Floor to floor design

The company has added a new design of roller or slide bed belt conveyor made up of an inclined section with adjustable horizontal sections at the two ends so work can be handled between two floor levels in either direction. The assembly is available in specified widths, lengths, heights and operating speed. A slide bed, employing a steel sheet, is available in place of rollers. Shafts ride on self-aligning ball bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 611**

International Stapling Machine saves $20,000 a year for UARCO

Uarco, Inc., Chicago manufacturer of business forms reports a savings of more than $1600 a month with an International Retractable Anvil stapling machine.

The stapler, a double-headed, air operated model priced at only $3400, is used to close filled cartons from the outside, top and bottom simultaneously. Daily volume is 2,500 cartons of varying sizes . . . in a 12 hour period.

International Stapling Machines will save you as much as 50% on shipping costs . . . write for additional details.

INTERNATIONAL STAPLING MACHINES
INTERNATIONAL STAPLE & MACHINE COMPANY
800 East Herrin Street, Herrin, Illinois

If you write maker identify as **IEN - 612**

5 REASONS FOR CALLING CORDS LTD.

For Cords and Cord Sets

- ★ Fast delivery on cords of standard construction.
- ★ Complete engineering and manufacturing service on cords for special applications.
- ★ Integrated engineering-production control from rod mill to mold department.
- ★ Most comprehensive stock of dies and molds for electronic cords and assemblies in existence.
- ★ Quality proved by use on millions of products.

Write for details, explaining your application

WIRE SX PRODUCTS

CORDS LTD.
DIVISION OF ESSEX WIRE CORPORATION
121 DODGE STREET, DE KALB, ILLINOIS

If you write maker identify as **IEN - 613**

Direct-casting Electric Furnace for better, faster precision investment casting

Melting position *Casting position*

The new, type IC, 12 kw., 10-lb. Detroit Electric Furnace melts and pours heats of chrome-nickel, Stellite or superalloy steels in 9-12 minutes. Casting is done by inverting the furnace, pouring directly into the investment mold which is held in place by air pressure. Melting by fast, controlled, indirect arc minimizes carbon pickup and alloy variation. Simple, efficient operation is ideal for high production of precision castings.

Write for complete information.

FEMA

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: in BRAZIL—Equipamentos Industrias, "Eisa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castellvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Cia Proveedora de Industrias, Atenas 32-13, Apartado 27A3, Mexico 6, D. F., Mexico; EUROPE, ENGLAND: Birlec, Ltd., Birmingham.

If you write maker identify as **IEN - 614**

MIRACLE REINFORCEMENT BASE ADDS YEARS TO FLOOR LIFE!

- **MINIMUM UPKEEP**
- **RUGGED**
- **SAFE**

Floorsteel Rolls Out Like A Rug!

FLOORS STILL IN PERFECT CONDITION AFTER MORE THAN 25 YEARS!...

Workmen installing Klemp Floorsteel Flexible Floor Armor for reinforcement of concrete surface.

KLEMP HEXTEEL® or FLOORSTEEL®

REINFORCED (AND INSTALLED) INDUSTRIAL FLOORS

Klemp Hexteel or Floorsteel solve once and for all the problem of solidity, smoothness, and upkeep of any floor daily subjected to the hardest, most wearing assaults of trucks bearing materials of great weight. Fabricated of heavy-duty steel grid flooring material, they are scientifically designed to be filled with concrete or mastic on old or new floors (either wood or concrete). When filled, they make a solid one-piece, rigid, smooth, and seamless mat over the entire floor area, so that the tread of the wheel is always on steel.

IMPORTANT: Before installing—Insure longer floor life and maintenance savings by consulting Klemp engineers who will gladly help you (without obligation) to make a thorough study of your flooring problems.

Send for your free copy of the informative booklet: "Instructions for laying Klemp Hexteel and Floorsteel."

KLEMP
We Tread the World with Safety

KLEMP METAL GRATING CORP.
Executive Offices: 1375 North Branch Street, Chicago 22, Illinois

If you write maker identify as **IEN-615**

Challenge Layout Surface Plate with smooth, highly accurate surface.

CHECK THESE ADVANTAGES OF CHALLENGE precision LAYOUT SURFACE PLATES

Challenge Layout Surface Plate with "Tee-Slots".

- ✓ Smooth accurate surfaces for layout, inspection or assembly.
- ✓ Built of fine-grade, special analysis semi-steel.
- ✓ Sixteen standard sizes, six inches thick — other sizes to order.
- ✓ Available with "Tee-Slots", or with grooving, scoring or machining for checking and assembly.
- ✓ Plates can be grooved and keyed so that two or more can be assembled into one large complete unit.

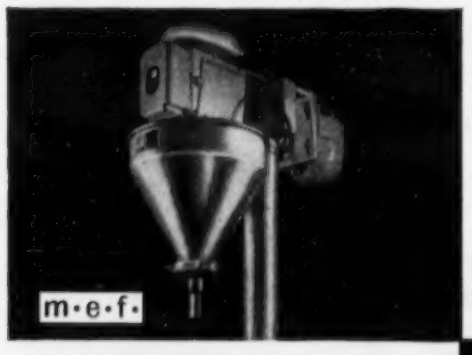
SEND FOR CATALOG Write today for catalog which includes complete information and prices on Challenge Surface Plates.

Challenge TRADE-MARK

THE CHALLENGE MACHINERY COMPANY
Office, Factories and Show Room:
Grand Haven, Michigan

732

If you write maker identify as **IEN-616**



All electric filling head has a capacity range of 30 mg. to 2 lbs. for dry materials, ½ cc. to 2½ quarts for wet materials. Accurate to ±1%. Handles cold or hot materials including waxes, insulating compounds, asphalts, powders, granular materials and slurries.

m·e·f·

DELIVERS MEASURED QUANTITIES OF WET OR DRY MATERIALS TO PROCESSES OR CONTAINERS

sets new standards of low cost production

A new high in filling speed—up to 120 fills per minute; maximum accuracy—savings in material often offset initial cost within a year; extreme flexibility—of capacity, control, materials and packages handled; quick change-overs—it takes only 5 minutes to clean, sterilize and change m·e·f· for wet or dry materials; ease of maintaining cleanliness and sanitation.

Write Dept. 105 for illustrated, descriptive catalog. G. Diehl Mateer & Co., Lincoln Highway, Devon, Pa.

m·e·f· MATEER ELECTRIC FILLERS

FAST • ACCURATE • FLEXIBLE • CLEAN

If you write maker identify as **IEN-617**

The Trojan Tractor will quickly convert existing slow, hand traveled hoists and small cranes to power travel and speed up material handling. It is a compact, low cost, power travel unit that can be readily attached to overhead material handling equipment by means of a simple draw bar.

Send in this advertisement for more information and a copy of Trojan Tractor Bulletin 810; just fill in company name and address.

DETROIT HOIST & MACHINE CO.
8227 MORROW ST. • DETROIT 11, MICH.

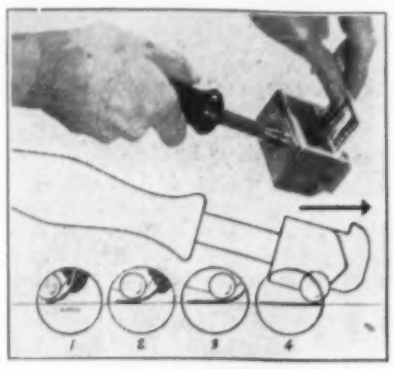
Company_____

Address_____

If you write maker identify as **IEN-618**

MARKING . . Electric hand tool heats and applies thermoplastic labels

Source: LAKSO CO.
P. O. Box 257-A, Fitchburg, Mass.



The Lakso Labeler

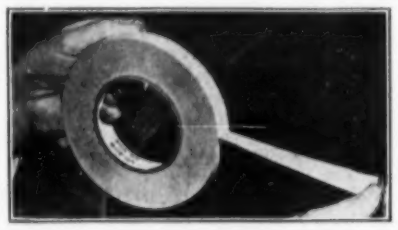
Labels with a thermoplastic adhesive face are fed one at a time into this new hand tool. An electric element activates the thermoplastic face. The label is drawn through the tool head and is rolled down upon a surface by a squeegee roller, also mounted in the head. The roller expels air under the label by flowing the heat seal coating into intimate contact with the surface upon which the label is being applied.

The tool is available for hand operation in the form shown. It also can be mounted in a stand for stationary use above a roller base on which cylindrical objects such as bottles are placed to be labeled. Three sizes take labels to 2, 4 and 6 in. in width. Corresponding minimum length is 2 and 3½ inches. The heating element operates on 110-volt ac.

If you write maker identify as **IEN-619**

PAINTING . . Masking tape, self-adhesive, flexible, strips clean

Source: MYSTIK ADHESIVE PRODUCTS
2633-37 N. Kildare Ave., Chicago 39, Ill.



Price list 500

Cellulose fiber is saturated with a rubber compound to make the backing for this new self-adhesive masking tape. It is known as Thinflex No. 6207. The backing is creped and is characterized by flexibility that assists in masking curved as well as straight outlines. Adhesive strength is sufficient to hold the tape tightly in position. It strips off quickly without breaking, leaves a sharp clean paint line. Width ranges from ¼ to 4 in. in 60-yd. rolls. Other widths can be specified to 36 inches.

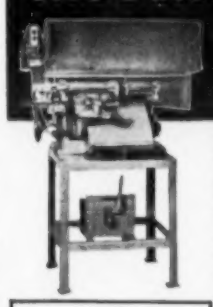
Identify as **IEN-620**

If you have photographic film to keep clean, film in quantities, DuPont suggests its Freon 113 non-flammable liquid. It is the same type of chemical that refrigerates and serves as a cooling agent for air conditioning. The liquid is available in 100 and 200-lb. drums for application by machine or hand. It dissolves and washes away gums and oils that have gathered on the photographic film. It does not affect the emulsion of either black and white or color film. It can be combined with beeswax to make a lubricant to treat motion picture film prior to projection.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-621**

How to CUT AND STRIP INSULATED WIRE... *as fast as 3,000 lengths per hour!*



ARTOS *Automatic* MACHINES REDUCE TIME AND COST

For quantity production of finished wire leads . . . measured, cut to length, and stripped at one or both ends . . . investigate Artos Automatic Machines.

The Model CS-6 illustrated can complete up to 3,000 pieces per hour in 15-in. lengths, and other lengths in proportion. You save through combined operations . . . through quick, easy set-up . . . through unskilled help who can handle this machine. You obtain substantial time savings over the best manual or semi-automatic methods.

Highly accurate machine operation reduces work spoilage to an absolute minimum—errors due to the human element are eliminated. There is no cutting of strands or nicking of solid wire. Uniform lengths and uniform stripping are produced consistently.

MODEL CS-6E CAPACITY

FINISHED PIECES PER HOUR —15 in. lengths, 3000 per hour; 97 in. lengths, 500 per hour.
MAXIMUM STRIPPING LENGTH—1½ in. at each end.
MAXIMUM CUTTING LENGTH—97 in.
MINIMUM CUTTING LENGTH —2 in. (⅞ in. special).
WIRE HANDLED—Solid or stranded single conductor wires, parallel cord, heater cord, service cord, etc.
MAXIMUM WIRE SIZE—No. 10 stranded or No. 12 solid.

WRITE FOR BULLETIN

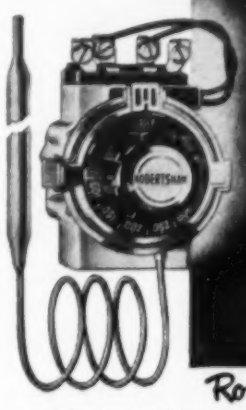
Get the complete story—write now for Bulletin 35-C on Artos Model CS-6 machines.

Automatic Wire Cutting and Stripping

ARTOS ENGINEERING CO.
2749 S. 28th St. • Milwaukee 46, Wis.

If you write maker identify as **IEN-622**

DEPENDABLE Heat Control FOR MANY USES



- For melting pots for solder, wax, plastics, etc.
- For hot water boosters and water heaters.
- For urns, fryers, ovens, cooking equipment.
- For automatic heat sealing machinery.
- For sterilizers and similar applications.
- For label dispensers, heating equipment, etc.

Robertshaw D-1

Here's a highly sensitive, accurate control ruggedly constructed and designed to meet a wide variety of heating applications with a maximum temperature range of 550° F. It is a double pole, single throw, direct acting control. No separate "off" switch is required. The mechanism is actuated by a hydraulic thermostatic element consisting of a bulb, capillary tube and diaphragm. (Also available in reverse acting types.)

Write for full information.

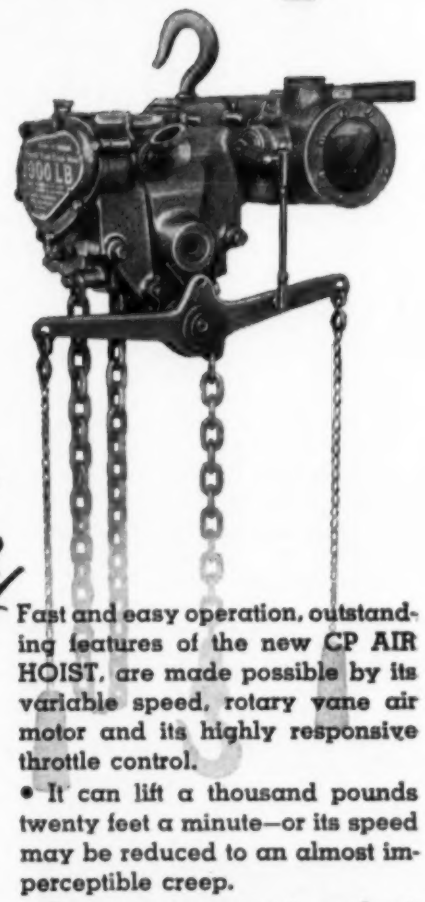
In Home and Industry *EVERYTHING'S UNDER CONTROL*

Robertshaw® THERMOSTAT DIVISION

Robertshaw-Fulton Controls Company • Youngwood, Pennsylvania

If you write maker identify as **IEN-623**

spots a load quickly—



sets it down gently

Fast and easy operation, outstanding features of the new CP AIR HOIST, are made possible by its variable speed, rotary vane air motor and its highly responsive throttle control.

- It can lift a thousand pounds twenty feet a minute—or its speed may be reduced to an almost imperceptible creep.
- Its air motor cannot overheat, and has no shock or spark hazard, no switches to maintain.
- Automatic braking is provided by self-locking worm gear — no brake bands to adjust or replace.
- A millwright can readily carry Air Hoist to any location, since it weighs only 57 pounds.
- Furnished in 300, 500, 700 and 1,000 pound capacities.

Write for Bulletin SP-3027.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

If you write maker identify as IEN - 625

Improve Combustion Efficiency
of your
Industrial Gas or Oil Burners
INSTALL
ROBINSON TURBINE TYPE PRESSURE BLOWERS

They are designed for accurate performance and constructed for trouble-free service.

Ask for Bulletin No. 1100

ROBINSON VENTILATING COMPANY
Manufacturers of Fans and Ventilating Machinery for over fifty years
1945 HARMONY STREET
ZELIENOPLE PENNSYLVANIA

If you write maker identify as IEN - 626

How much will it cost you to replace your floors?

TYPE OF FLOOR	INSTALLED COST* OF 50,000 SQ. FT.
Asphalt Tile	$15,000
Concrete	18,000
Linoleum	21,000
Hardwood	27,500
Cork	39,000
Rubber Tile	44,000
Vinyl Tile	44,000
Ceramic Tile	65,000
Terrazzo & Mosaic	87,500
Marble	300,000

*Based on reports of reliable flooring contractors in urban areas.

PROTECT YOUR FLOORS

As you can see, floors are expensive! So it makes good sense to preserve them with regular, planned care.

How can you do it?

With West's simple, proven FLOOR PRESERVATION PLAN. (1) *Cleaning* — remove all dirt without harming floors (2) *Sealing* — fill the pores. Provide a protective coating (3) *Maintaining* — put on a tough, anti-slip floor wax.

The West Plan offers you more than 20 proven products. A West Floor Specialist will help you select the program or product you need.

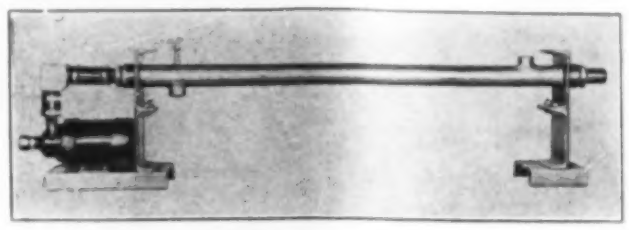
WEST DISINFECTING Company

Dept. 13
42-16 West Street, Long Island City 1, N. Y.
Visit us at the PLANT MAINTENANCE SHOW — CLEVELAND Jan. 19-22 — Booth #501

If you write maker identify as IEN - 628

HEATING . . Concentric tube unit to heat or to cool corrosive liquids

Source: HEIL PROCESS EQUIPMENT CORP.
12899 Elmwood Ave., Cleveland 11, Ohio



Impervious graphite

Nocordal impervious graphite is employed as the inner heat exchange tube in this new concentric tube assembly. It is known as Exchanger No. 1251. The graphite provides conductivity approximately twice that of steel or nickel and about six times that of stainless steel although any of these other materials can be specified in the complete assembly.

The external tube is provided with side inlet and outlet. The inner tube is serviced by a motor driven pump, shown in the illustration, when this equipment is specified. One tube assembly can be used, or several can be mounted in manifold arrangement to meet given requirements.

If you write maker identify as IEN - 629

EXTERMINATING . . Non-toxic fluid to kill insects found in food plants

Source: DIVERSEY CORP.
1818-22 Roscoe St., Chicago 13, Ill.

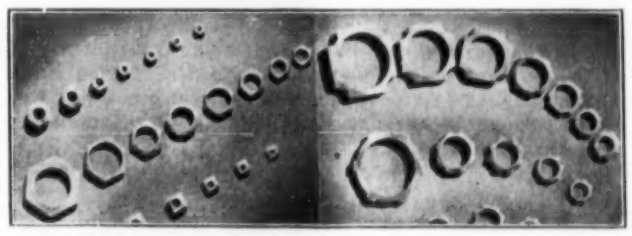
Ask for free demonstration

Diverside trade names a new non-toxic chemical insecticide based on pyrethrum with other chemicals developed by the company. Application results in eradication of roaches, flies and similar insects. There is no DDT content.

If you write maker identify as IEN - 630

FASTENING . . Machine screw nuts, characterized by their double chamfer

Source: JACOBSON MFG. CO.
11 Newark Ave., Kenilworth 6, N. J.



In bulk quantities only

The company announces development of new special equipment on which it is prepared to manufacture double chamfered machine screw nuts in large quantities. The nuts can be supplied square, hexagon, lug equipped, and in special shapes in aluminum, brass, steel and stainless steel. Sizes range from No. 2 to ⅜ inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 631

Rotary®
OILDRAULIC® POWER
Cuts the cost of lifting heavy loads

Write for catalogs
ROTARY LIFT CO. • 1068 KENTUCKY, MEMPHIS 2, TENN.

If you write maker identify as IEN - 632

Stop human errors in reading, remembering, recording! Toledo Printweigh Scales provide accurate printed weights . . . *accurately* recorded. Send for bulletin 2021. Toledo Scale Co., Toledo 1, Ohio.

CONTROL COSTS

TOLEDO®
Headquarters for SCALES

If you write maker identify as IEN - 633

Fans.. Blowers
FOR ALL INDUSTRY
"Standard Units or Custom Design"

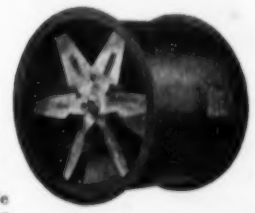
DOUBLE SWIVEL AEROSPOT

Fans and blowers in a wide range of standard size units are available for specific air moving and ventilating requirements. Special custom designed equipment can also be furnished. Our staff of engineers is at your disposal for competent advice on any ventilating problem. Correspondence invited, without obligation.

SEND FOR CATALOG TODAY!

For column or wall mounting. Saves valuable floor space. Direction of blast adjustable: 360° around Spindle Axis, 90° around Motor Support Axis. Sizes, 20" to 36".

6 Blade DYNAFLOW Unit
Also available in two and four blade types. Sizes, 16" to 36".

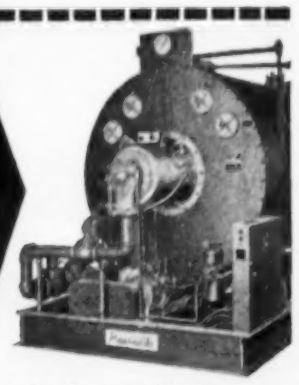


DUCTYPE BLOWER
Direct driven, single or tandem fan units. Also available with belt drive. Sizes, 10" to 36".

SOUTH BEND AIR PRODUCTS, Inc. 322 E. COLFAX AVE. SOUTH BEND, IND.

If you write maker identify as IEN - 634

ONLY THE *Powermaster*® GIVES YOU *VORIFLOW*® COMBUSTION!



Latest Development in Burner Design Saves Fuel and Man-Hours

1. Wide range modulation between high and low fire at full efficiency—you use less fuel. **2.** Freedom from carbon cuts clean-up time and expense —usually by 50%. **3.** Change from oil to gas (or gas to oil) in a few minutes.

To Cut Your Steam Costs Mail Coupon Today

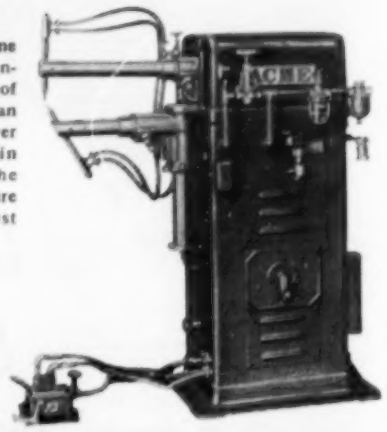
ORR & SEMBOWER, INC. • 860 Morgantown Road • Reading, Pa.
Please send my free copy of the POWERMASTER catalog.

NAME _____ TITLE _____
(Please Print)
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 635

ACME

"Hot Spot" WELDERS



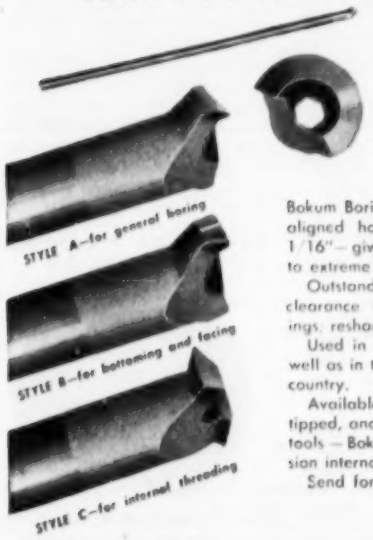
Here is a complete line of resistance welders, considered the "Cadillac" of its field—at a price you can afford, and backed by over 35 years of service in plants throughout the world. Write for literature or name of your nearest distributor.

- SPOT
- PRESS
- PROJECTION
- SEAM
- PORTABLE
- SPECIALS

ACME ELECTRIC WELDER CO.
2642 FRUITLAND AVE., LOS ANGELES 58, CALIF.

If you write maker identify as IEN - 636

Yes, holes as small as 1/16" diameter can be bored with precision



Bokum Boring Tools will produce perfectly aligned holes — any diameter down to 1/16" — giving you uniformly smooth bore to extreme depth.

Outstanding features: long life; constant clearance throughout repeated sharpenings; resharpening done on one face only.

Used in highest precision production as well as in tool room requirements over the country.

Available in high speed steel, carbide-tipped, and solid carbide in form-recessing tools — Bokum system — and also in precision internal threading tools.

Send for our new catalog.

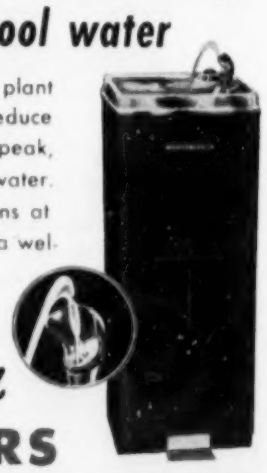
BOKUM TOOL CO.
SINGLE POINT BORING TOOLS — INTERNAL THREADING, BOTTOMING AND FACING TOOLS — CARBIDE TIPPED TOOLS
DEPT. N • 14775 WILDEMERE AVE. • DETROIT 21, MICH.

If you write maker identify as IEN - 637

... all appreciate cool water

No matter where they work—in plant or office — you can save steps, reduce fatigue, keep production at the peak, with a dependable supply of cool water. Halsey Taylor coolers or fountains at strategic plant locations provide a welcome solution.

Write for latest literature.



Halsey Taylor COOLERS

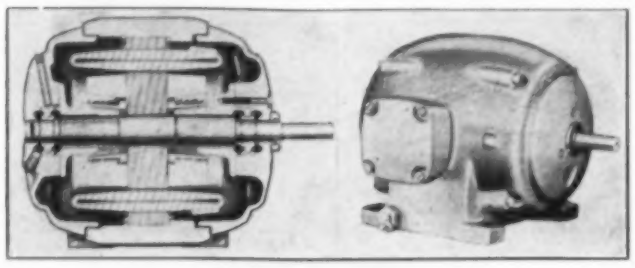
SEE OUR CATALOG IN SWEET'S

THE HALSEY W. TAYLOR CO., WARREN, OHIO

If you write maker identify as IEN - 638

MOTOR . . Explosion proof ac., 1/3 to 2 hp., fan cooled to 75 hp.

Source: U. S. ELECTRICAL MOTORS INC.
Box 2058-A, Terminal Annex, Los Angeles 54, Calif.



The design is self-cooling

Type SS designates a new totally enclosed motor, as shown in the illustration, for services involving dampness, dust, fire hazards, corrosive fumes. The motor is characterized by its smooth exterior to help when wiping off or hosing down. A slinger protects the shaft bearing against the entrance of dust or water.

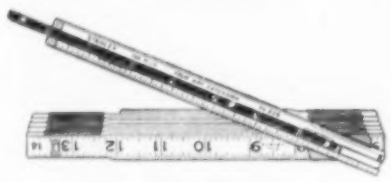
A companion Type SES has been approved for explosion proof service in hazardous locations by Underwriter's Laboratories, Inc. In this latter design, a drain plug is provided to release condensation water from the interior without loss of the explosion proof characteristics.

Both types meet NEMA Standards. They employ sealed terminal chambers, asbestos protected windings, solid Centricast rotors and Lubriflush ball bearings with provision to force new grease through in order to purge out old grease.

If you write maker identify as IEN - 639

GAGE . . Hinged wood rule with slide, reads to right and left

Source: STANLEY TOOLS
478-82 Myrtle St., New Britain, Conn.



Identified by green ends

Model X226 is a new hinged wood rule with an extension slide in one end section. This 8-in. slide is made of brass. It can be employed on inside measurements in addition to application of the rule itself for the same purpose.

Graduations read from both ends presenting black numbers and lines impressed on white background. The rule is made of maple sections that open to even inches at each end of each section. The ends are square to butt flush with the work so the rule can be used as a marking gage in graduated steps up to its 72-in. length.

Identify as IEN - 640

One of the very best financial statements we have seen has come to us from Dow Chemical Company under the title, "Facts and Figures Dow 1952". There you can see the amounts, without confusing details, that the company received and paid out and reserved for all purposes. Other manufacturerers might profit by asking for a copy of this first-class 40-page job, just released.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 641

Never Before!

... SO MUCH POWER PER POUND

MEET the new Rotor Vertical Air Grinders! Never before have you had so much power in vertical air grinders . . . for such light weight! They're well balanced . . . easy on the operator. Here are *new* features to speed up your metal removal. *Write today for Bulletin No. 40.*

AIR O'TOOL

THE ROTOR TOOL CO.
CLEVELAND, OHIO

If you write maker identify as IEN - 642

CAN BE MADE PORTABLE IF DESIRED

THE NEW A-B-C *Junior* CASE SEALER

The A-B-C Junior Case Sealer automatically seals corrugated shipping containers in only a fraction of the floor space ordinarily required. Operation is fast—trouble free—economical. A completely new flight chain construction virtually eliminates carton jamming . . . Three semi-automatic models are available to fit most case sizes. Write today for details and floor plans.

A-B-C PACKAGING MACHINE CORP.
QUINCY, ILLINOIS

If you write maker identify as IEN - 643

MODEL 50 *Versatile*

Low Cost ELECTRONIC

THER-MONIC
INDUCTION HEATING UNIT

BRAZING
SOLDERING
HARDENING
ANNEALING
MELTING

FOR THE PRODUCTION LINE, TOOL ROOM or LABORATORY!

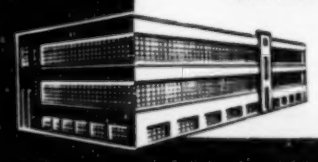
THER-MONIC, pioneer in the field of Induction Heating, offers the only completely contained, electronic generator for continuous production runs with either automatic or hand-feeds, or on small production runs which involve frequent work change-overs. Hundreds already in use; all are acclaimed by owners and operators.

Delivers ready for use—operates on 110V., 60 cycles. Rated in accordance with NEMA standards. Built & certified in accordance with F.C.C. regulations. Unit is similar to our larger sized, high production models. Furnished complete with timer and output transformer. Designed for safe, low voltage work coils.

THER-MONIC INDUCTION HEATING CORP. NEW YORK

$985. F.O.B. Factory

Fully guaranteed. Service and sales in principal cities. Write for literature.



Generators available up to 75 KW output.

INDUCTION HEATING CORPORATION
181 WYTHE AVENUE • BROOKLYN 11, N. Y.
Largest Producers of Electronic Heat Treating Equipment

If you write maker identify as **IEN - 645**

REMOVE STUBBORN GREASE AND DIRT FROM METAL PARTS — EASIER, FASTER, MORE ECONOMICALLY WITH . . .

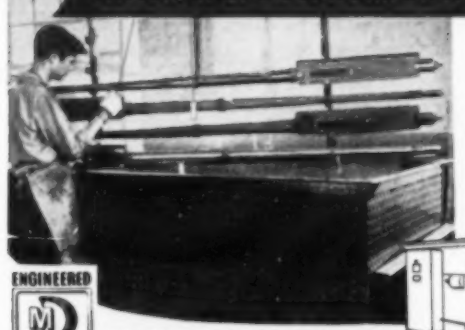


Photo shows 20 mm. guns after degreasing of Cosmoline, prior to modification operations.

ENGINEERED SERVICE

PHILLIPS

VAPOR DEGREASERS

THE most heavily greased up parts will come clean easier and faster in a Phillips degreaser. High vapor temperature (250.2° F.) not only causes more dissolved grease to run off the metal, but makes for faster degreasing too. Wherever you have parts to clean, large or small, before plating, painting, rustproofing, service and repairwork, etc., you can do it better, faster and more economically with a Phillips degreaser. There's a standard model to meet your needs. Check with Phillips today.

SEND FOR YOUR FREE COPY OF NEW ILLUSTRATED DEGREASER BULLETIN!

Phillips 3461 Touhy Avenue • Chicago 45, Illinois
MANUFACTURING COMPANY
Vapor Degreasers • Solvents • Parts Washers

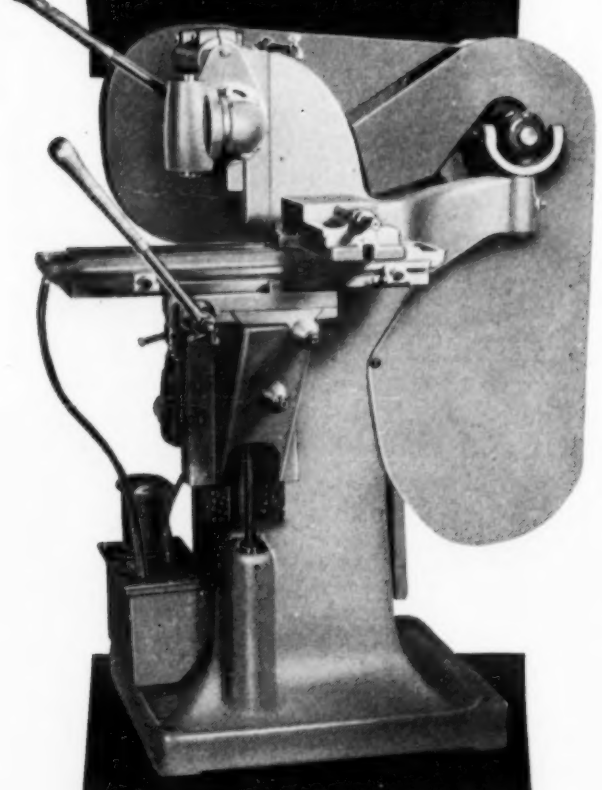
If you write maker identify as **IEN - 646**

Equally Economical and Efficient

for one-of-a-kind or a million of the same milling operations

U.S. NO. 1

ALL-PURPOSE, HAND-FEED MILLING MACHINES are adaptable to specialized production jobs with a variety of automatic devices.



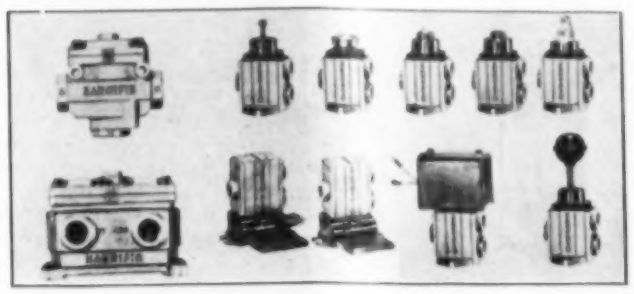
Our suggestions as to how a U. S. No. 1 Milling Machine can cut costs on your particular production needs, as well as complete data on the basic machine and attachments, gladly furnished on request.

United States
MACHINE TOOL CO.
A Division of U. S.-BURKE MACHINE TOOL CO.
BROTHERTON ROAD 5, CINCINNATI 27, OHIO

If you write maker identify as **IEN - 648**

VALVES . . Pneumatic 3-way pilots actuate company's Pilot-Master valves

Source: HANNIFIN CORP.
1108 S. Kilbourn Ave., Chicago 24, Ill.



Illustrated details on Bulletin 231

Series C designates a new 3-way valve. It is based, in miniature, on the company's 3-way direct operated pilot type valve mechanism. It is designed for pilot duty on the 2, 3 and 4-way Pilot-Master valves shown to the left in the illustration, previously described IEN-7692 and 10528-52.

The new valve is available with operating mechanisms to include solenoid, cam, toggle, lever, push button, hand lever and foot units, both locking and non-locking. The cam operated unit is active in one direction and rides free in the other. The mechanical toggle design can be operated from any direction when its lever is made part of a mechanical linkage. About 5½ lb. of manual pressure will operate the push button unit with line pressure to 150 pounds. The new unit is supplied with ¼-in. pipe connections that can be drilled and threaded ⅜ in. when desired.

If you write maker identify as **IEN - 649**

BATTERY . . Two and three cells in transparent polystyrene cases

Source: ELECTRIC STORAGE BATTERY CO.
Box 8109-A, Philadelphia 1, Pa.

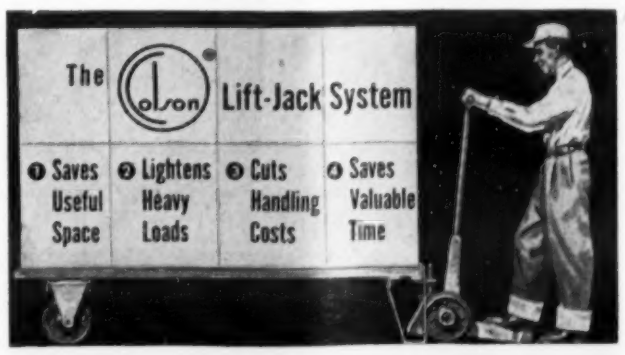
Balls signal condition

Exide Tytex Type COE is a new line of two and three-cell industrial batteries. It has been added to the Type-PLX design, previously described IEN-13899-52. Electrolyte level and approximate state of charge can be noted at a glance through the transparent case as in Type PLX. Colored pilot balls indicate the state of charge. Solution level lines marked on the cases show the recommended upper and lower levels. Funnel filling vents are molded into the covers. Unbreakable spray proof vent plugs keep out dust and other foreign matter.

The two-cell design is made in end-to-end and side-to-side assembly. The three-cell battery is available only in side-to-side design. Width and height of the end-to-end units have been standardized at 8 and 8½ inches. Corresponding dimensions of the side-to-side assemblies range between 4¼ and 8½ inches. Capacities at the 8-hr. rate are 10 to 30 ampere hours. Typical applications are in railway signaling, laboratory work, in communicating equipment, emergency lighting, electronic equipment operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 650**



Through production, in and out of storage, on and off freight cars, the COLSON Lift-Jack System saves you man-hours, money and valuable space.

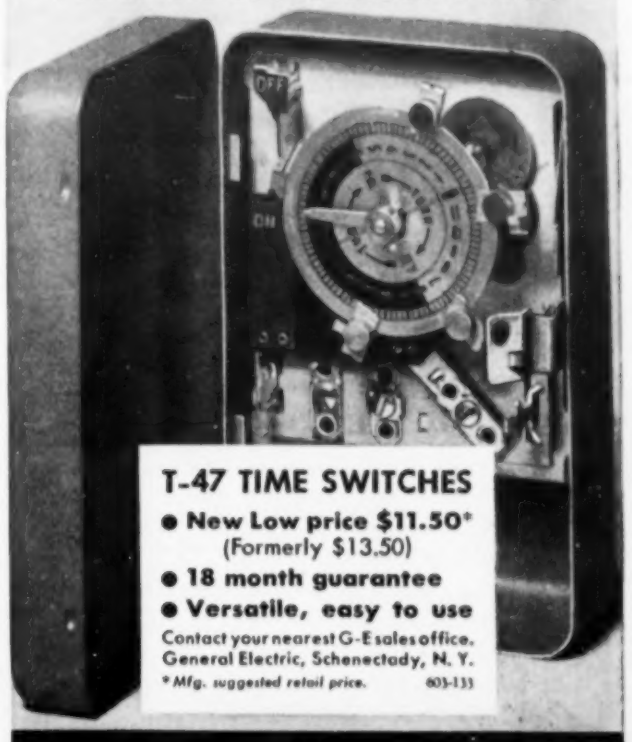
Many other cost-saving materials handling devices are produced for you by COLSON, including hand trucks, platform trucks, drum and barrel trucks, and precision built, roll-easy wheels and casters for every type of industrial application.

Your nearest COLSON engineer can tell you how modern materials-handling can speed up your operation and save you money. Write us or consult the yellow pages of your local phone book for the COLSON representative near you. *Write Today for new Catalog*

THE COLSON CORPORATION
ELYRIA, OHIO
CASTERS • LIFT-JACK SYSTEMS • INDUSTRIAL TRUCKS

If you write maker identify as **IEN - 651**

Now at New Low Price



T-47 TIME SWITCHES
- **New Low price $11.50***
  (Formerly $13.50)
- **18 month guarantee**
- **Versatile, easy to use**

Contact your nearest G-E sales office. General Electric, Schenectady, N. Y.
** Mfg. suggested retail price.* 603-133

GENERAL ELECTRIC

If you write maker identify as **IEN - 652**

This new booklet shows you how Kodak Contour Projectors can simplify your inspection and measurement problems

Just off the press is the most informative booklet on Kodak Contour Projectors we've ever published.

- It shows by example and case history how you can inspect large parts, small parts, long parts, curved parts, complex parts, all sorts of parts on the Kodak Contour Projector.
- It gives details of both the Model 2A for precision micrometry, and the Model 3 for fast, routine gaging.
- It describes the features that make Kodak Contour Projectors adaptable to such a wide variety of work.
- It lists the accessories that extend their versatility.
- It discusses the measuring attachments that provide critical accuracy.

Whether your interest lies in toolroom measurement or production assembly and inspection, Kodak Contour Projectors will do the job quickly, completely, and accurately with little training of operators. For complete details send for your complimentary copy of this new 12-page booklet. Just write to Eastman Kodak Company, Industrial Optical Sales Division, Rochester 4, N. Y.

the KODAK CONTOUR PROJECTOR

A new sound movie, Optical Gaging, shows how to simplify complex inspection problems. We'll tell you how to get it for a showing.

Optical Gaging

Kodak
TRADE-MARK

If you write maker identify as **IEN - 654**

This building saves money 3 WAYS

If you need more space an Armco Steel Building will save you money 3 important ways.

1 Erection can be done by a small crew in a matter of hours. Valuable time is saved because unique STEELOX Panels provide both structural support and finished surface.

2 You also save on maintenance. Armco Steel Buildings are rigid, weathertight, noncombustible and lightning-safe when properly grounded. There is nothing to crack, warp or rot. Should your building be damaged the part is easily replaced.

3 Changing conditions can be met economically with an Armco Building. It can easily be expanded with standard parts, rearranged, or the entire building can be dismantled and re-erected without loss of material.

WRITE FOR THE COMPLETE MONEY SAVING STORY

ARMCO DRAINAGE & METAL PRODUCTS, INC.
1033 Curtis Street • Middletown, Ohio

If you write maker identify as **IEN - 655**

SALIENT FEATURES OF HAR-BAR BARRIERS

1. High enough to stop your car.
2. Low enough to clear your bumper guards.
3. Barrier is above ground — no drainage problem.
4. Barrier is above ground — no rotting of wood.
5. Automatically spaces your cars.
6. Follows contour of your ground.
7. Easily installed — just line up and drive the anchor pins.
8. Easily moved — just pull the anchor pins. 100% reusable.
9. Easy to clean under.
10. Easy to maintain.
11. Installed on any kind of surface — black top, cement, macadam, gravel or cinders.
12. It really dresses up your parking lot.
13. You always stop against your tire — no shock.
14. Castings are non-rusting aluminum alloy.

Send us a plot plan of your parking lot—we do the engineering free.

HARRIS-BARRIER, INC. 5407 N. PENNSYLVANIA STREET INDIANAPOLIS 5 • INDIANA

If you write maker identify as **IEN - 656**

Compact Power for Low Speeds

NEWEST OF ALL MOTORS

RIGHT ANGLED
PYRAMIDAL BASE
CANTILEVER DESIGN
20 TO 155 RPM
¼ TO 3 H.P.

New line of right-angled, worm-geared low speed motors—**Type GW Syncrogears.** Cantilever design protects gear alignment by preventing distortion of gear and motor housing. Rigid one-piece pyramidal base absorbs mounting stresses. "Spread-eagle" feet insure utmost stability. Parabolic contours lend graceful appearance. Compact "short hitch", of special appeal to Design Engineers.

TYPE GW **U.S. SYNCROGEAR**

Get this *FREE* BULLETIN

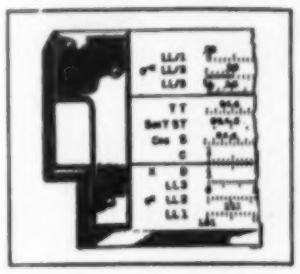
Just off the press—profusely illustrated Bulletin presents complete details with multi-color illustrations. Various types and sizes. Full of facts how to apply right-angle power for longer life.

U. S. ELECTRICAL MOTORS Inc.
Los Angeles 54, Calif. Box 2058 or Milford, Conn.

If you write maker identify as **IEN - 657**

CALCULATING . . Slide rule with color code scales to prevent error

Source: FREDERICK POST CO.
3652 N. Avondale Ave., Dept. V, Chicago 18, Ill.



Free brochure

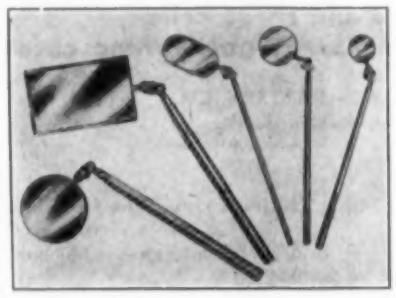
Calculations involving trigonometric functions can be performed on the company's new Versalog slide rule without danger of making an error by matching the color of the trigonometric scale with the **same** color of the corresponding C, D or CI scales. The R1 and R2 scale combination is useful in computing kinetic energy, moment of inertia and other quantities in which multiplication by the square of a number is involved in a calculation.

These scales, in conjunction with the D scale, provide for fast and accurate calculations in radiant heat transfer in which numbers raised to the fourth power are involved. New end zone designations of the log-log reciprocal scales are inscribed to the left of these scales. Designations of the LL scales are also at the left hand side in convenient arrangement as shown in the illustration.

If you write maker identify as **IEN - 658**

MIRRORS . . For inspection use in locations normally inaccessible

Source: ULLMAN PRODUCTS CORP.
152 Prospect Ave., Brooklyn 15, N. Y.



Copper backed

Universal ball joints, replaceable mirror elements and telescoping handle construction feature the company's new line of inspection mirrors, previously described IEN-3006-43. The line includes round, rectangular and oval units from ⅞ in. in diameter on a 7-in. handle to 2½ in. in diameter on a 13-in. telescoping handle. Two rectangular units measure 2⅛ by 3½ inches. The oval design measures 1 by 2 inches. In addition to the plain and telescoping handle assemblies shown in the illustration, the mirror is available in a Model M with mounting on a permanent magnet base. The ball joint connection permits adjustment to any position desired by the operator.

Identify as **IEN - 659**

Ucon, the synthetic lubricant developed by Carbide and Carbon Chemicals Company in 1948, is being used with a good deal of success in the packings and seals on reciprocating pumps handling low temperature hydrocarbon liquids. Experience is indicating that packing life can be increased as much as 15 fold when the synthetic lubricant replaces petroleum oil. It prevents adhesion of ice crystals to push rods so there is no tendency to tear the packing. The company will send you samples of the lubricant for specified use.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 660**

The Most Economical

Made of fewer parts, each part of specially selected steel, individually hardened for a specific purpose — they last longer.

CURTIS UNIVERSAL JOINTS

Not only do they give efficient service for a longer period of time but they are easier to install, quicker to assemble and disassemble. 14 standard sizes to choose from—with either solid or bored hubs. Facilities immediately available to produce specials to specifications.

ONLY CURTIS OFFERS ALL THESE ADVANTAGES

Availability — 14 sizes always in stock.
Simplicity — fewer parts, simpler construction.
Government Tests — complete equipment for government tests in our plant.

the only Universal Joint with the "Telltale" Lock Ring (patented)

Write today for free engineering data and price list

CURTIS UNIVERSAL JOINT CO., INC.
7 Birnie Avenue Springfield, Mass.
As near to you as your telephone

A MANUFACTURER OF UNIVERSAL JOINTS SINCE 1919

If you write maker identify as **IEN - 661**

AA-251

Camachine®

SLITTERS AND ROLL WINDERS

If you want fast, low cost production of top-quality rolls of paper, plastics, textiles, rubber, and other plain, coated, laminated or tacky-surfaced materials . . . it will pay you to investigate Camachines!

Bulletin 1010 will be sent on request

26-3A, a popular CAMACHINE featuring differential rewinding and positive roll separation. Rolls produced on the 26-3A are ideal for further processing, or for consumer use.

Cameron Machine Company • 61 Poplar Street • Brooklyn 2, N. Y.

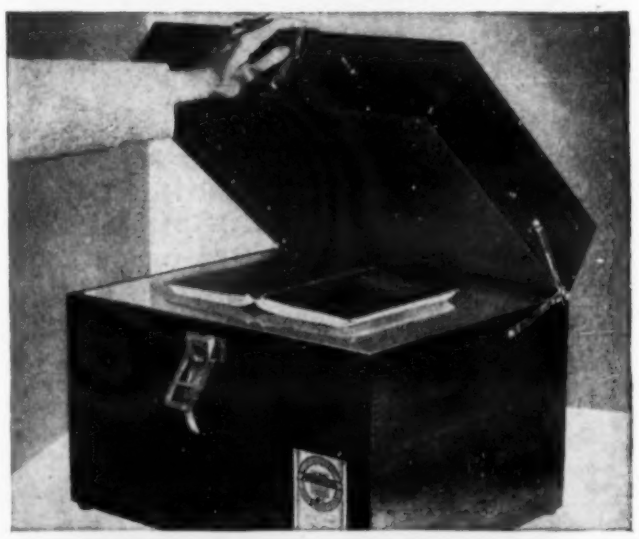
If you write maker identify as **IEN - 662**

they call me Handy Andy

Here's the handiest test pump for hydraulically testing pipe, valves and fittings; for operating hydraulically actuated equipment; for hundreds of other uses in field, laboratory or shop. ★ This two-stage, manually operated pump has one cylinder for low-pressure testing (up to 2,500 psi); is quickly shifted to develop up to 6,000 psi. ★ Replaces elaborate, expensive testing equipment. ★ Readily portable (weighs only 70 pounds) and with a bucket of water you can quickly and painlessly develop on-the-spot pressures up to 6,000 psi. ★ Costs mighty little—lasts indefinitely—pays for itself long before a few inexpensive wearing parts need to be replaced. ★ For details and price address . . .

BAKER OIL TOOLS, INC.
BOX 2274 TERMINAL ANNEX
LOS ANGELES 54, CALIFORNIA

If you write maker identify as **IEN - 663**



New Peerless Photocopy Printer with "Pneumatic Cushion"

Makes Books, Records and other Thick Material Easy to Copy

PEERLESS

Write for free brochure and full particulars

PEERLESS PHOTO PRODUCTS, INC., SHOREHAM, L. I., N. Y.

Distributors in: Los Angeles, Chicago, Cleveland, Detroit, Pittsburgh, Buffalo, Tulsa, Dallas, Houston, Salt Lake City, Atlanta

If you write maker identify as IEN - 664

Its all in the *Heat Treatment*

ORIGINATORS OF THE SUPER SAFE STEEL STAMPS

The "Tough" back to absorb hammer blows without crushing or distorting —The "SOFT" center to cushion the shock — The "HARD" tip to insure cleaner impressions and a longer lasting stamp make the RICK the better safer stamp. These stamps are made in ANY type to fit ANY holder.

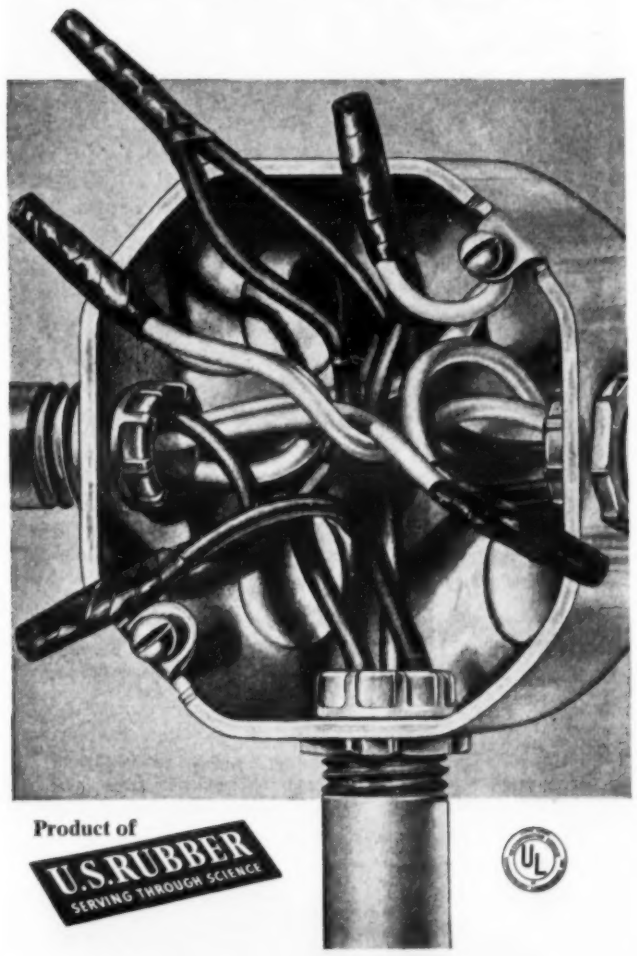
WRITE TODAY for ADDITIONAL INFORMATION

We are also manufacturers of—
- Special branding and knurling wheels .
- Engraved plastic molds . . .
- Name stamps . . .
- Designs and trade marks . . .
- Embossing dies . . .
- Various Marking Dies and Tools

PITTSBURGH STENCIL and TOOL COMPANY
REEDSDALE and SCOTLAND STREETS
PITTSBURGH 12, PA.

If you write maker identify as IEN - 665

U. S. ROYALASTIC keeps junction boxes neat and uncluttered



Product of U.S. RUBBER SERVING THROUGH SCIENCE

NOTE the slender, easy-to-get-at splices in this junction box. U.S. Royalastic Vinyl Tape is the secret—it does the work more neatly and quickly than ordinary tape *in just one wrapping*. Royalastic provides much more dielectric strength and mechanical protection. It stretches up to 200%, clings snugly on all irregular shapes. Excellent resistance to water, oils, acids, alkalies, corrosive chemicals, and weathering.

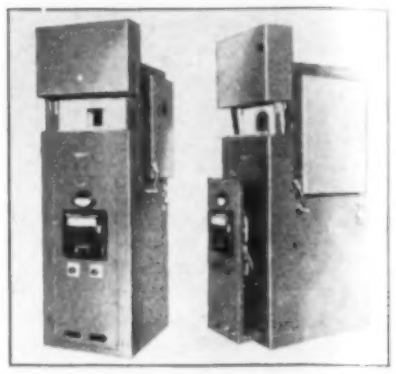
United States Rubber Company is now a single source for every electrical tape. In addition to U.S. Royalastic, there is U.S. Security Friction Tape, and U.S. Security Rubber Tape.

UNITED STATES RUBBER COMPANY
Mechanical Goods Division, Rockefeller Center, New York 20, N. Y.

If you write maker identify as IEN - 667

HEATING . . Electric furnace for laboratories, 600 to 2,700 deg. F.

Source: BURRELL CORP.
2221-25 Fifth Ave., Pittsburgh 19, Pa.



Ask for Bulletin 315

Model 30 is one of five new designs of electric laboratory furnace in box and muffle type. It provides a work space measuring 7 in. in width by 8¼ in. in depth and a doorway measuring 4½ in. in width by 4 in. in height. Heat is supplied by four silicon carbide elements in the roof of the chamber. Automatic temperature control is standard. Model 40 is the same as Model 30 except that it has a pyrometer indicator and is manually controlled.

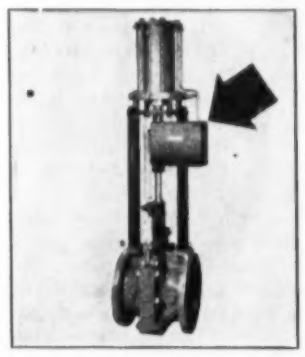
Model 50 has a working space measuring 11 in. in width by 8¼ in. in depth and a doorway measuring 7 by 5 inches. Model 70 measures 5 by 12½ in. and has a 5 by 5-in. door. It is equipped with four heating elements above and four below the hearth. Model 90 is equipped with a muffle heated from both above and below. It provides working space that measures 5 by 12½ in. with a 5 by 4½-in. doorway.

Each assembly is self-contained and mounts the control equipment on a draw-out panel beneath the furnace chamber. The door is raised and lowered by a lever at the side of the housing. Price complete with a stand ranges from $950 to $1,675. Spare heating elements are about $40 to $81 per set.

If you write maker identify as IEN - 668

CONTROL . . Pneumatic transmitter to position a power cylinder piston

Source: FOXBORO CO.
42 Neponset Ave., Foxboro, Mass.



On a Crane valve

Air pressure at 3 to 15 lb., from a standard pneumatic controller, applies to actuate the company's new Poweractor Positioner. It, in turn, controls flow of high pressure air to a power cylinder. The positioner is a force balance unit that connects to the cylinder piston rod through a bracket and spring so each change in the pneumatic controller's low pressure air signal produces a corresponding flow of high pressure air to reposition the piston in step with the control.

The new unit is designed particularly for use with the company's Stabiload cylinder and piston assembly to operate valves, dampers, variable speed drives. It will handle pressure air to 150 pounds It responds to a change in signal air to 0.25 per cent of range. It will position the power piston within 1 per cent of its total stroke under normal loading conditions. Assembly is in a housing that measures 6 by 7¼ by 3⅝ inches. Air connections are for ¼-in. pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

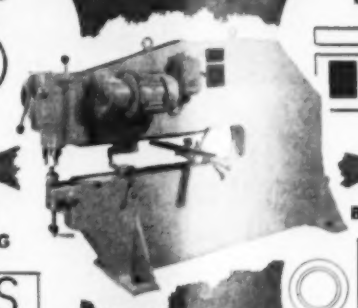
If you write maker identify as IEN - 669

PULLMAX Does all These Operations

SAVE TIME, LABOR & EXPENSIVE DIES

CIRCLE CUTTING

STRAIGHT CUTTING



SLOT CUTTING

BEADING

CHOICE OF 9 SIZES TO FIT YOUR REQUIREMENTS

FOLDING

From 16 ga. up to 11/32" capacity

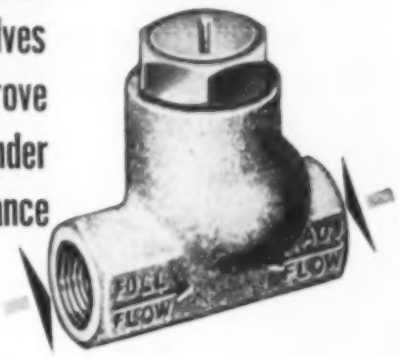
LOUVERS

MODERNIZE YOUR SHOP WITH PULLMAX
WRITE FOR LITERATURE AND PRICES

AMERICAN PULLMAX COMPANY, INC.
2459, NORTH SHEFFIELD AVENUE · CHICAGO 14, ILLINOIS

If you write maker identify as IEN - 670

Use Schrader flow control valves to improve Air Cylinder Performance



Positive control of compressed air is provided by **Schrader Flow Control Valves**. They control piston speed in either direction without reducing the force.

An adjustment screw permits quick increase or decrease of flow, from zero to full.

Available in five sizes, ⅛" to ¾" thread, and made of corrosion-resisting materials throughout, Schrader Flow Control Valves have simple construction readily serviced without being removed from the line.

Send today for complete information on Schrader Flow Control Valves. They'll help make air a more useful tool in your plant.

A. SCHRADER'S SON
Division of Scovill Manufacturing Company, Incorporated
458 Vanderbilt Ave., Dept. D-41, Brooklyn 38, N. Y.

If you write maker identify as IEN - 671

The M·S·A EXPLOSIMETER

. . . for quick, easy combustible gas detection

This portable instrument accurately tests for flammable gases or vapors in air mixtures. Ideal for *Public Utilities* in the detection and location of gas leaks in equipment and distribution systems; *Oil Refineries* for determining when tanks or other vessels are gas free, and for detection of leakage in process equipment: *Distilleries* for control of evaporation losses or leaks; *Paint and Varnish Plants* for vapor freeing of process equipment, spillage of solvents, and escape of vapors into the atmosphere; *Iron and Steel Mills* for locating fuel gas leaks; *Sewage Disposal Plants* for determination of digester gas leakage, and for all other industries where combustible gas hazards exist.

- Day-In, Day-Out Service
- Easy-Reading Meter
- One-Hand Operation
- Long Battery Life
- Light Weight and Compact

The M.S.A. Explosimeter is easily maintained in the field—requires no special training to operate.

MSA SAFETY EQUIPMENT HEADQUARTERS

MINE SAFETY APPLIANCES CO.
Braddock, Thomas & Meade Sts.
Pittsburgh 8, Pennsylvania
69 Branch Offices in the United States

If you write maker identify as IEN - 672

NEWCOMB-DETROIT

PIONEERS IN ENGINEERING, MANUFACTURING & INSTALLING OF

INDUSTRIAL OVENS
•
SPRAY BOOTHS
•
PARTS WASHERS
•
DUST COLLECTORS
•
HEAT and AIR SYSTEMS

ESTABLISHED 1912
- DETROIT DIVISION
- GRAND RAPIDS DIVISION
- NEWCOMB INDUSTRIES, LTD., WINDSOR DIVISION

For Bulletins and Quotations, Wire, Write or Call—
NEWCOMB-DETROIT
5757 Russell St., Detroit 11, Mich.
TR 3-2100

If you write maker identify as **IEN - 673**

Small precision metal parts... Torrington makes them better, and for less!

FREE CATALOG — shows the great variety of small parts we can produce inexpensively and promptly. Send for copy today!

If your product uses small precision metal parts . . . pivots, pins, dowels, rollers, mandrels, needles, punches, etc. . . . send us your blueprints for a prompt quotation.

As a leading contract fabricator, TORRINGTON is equipped with the special machinery to produce in any quantity for quick delivery at low prices.

THE TORRINGTON COMPANY
Specialties Division
360 Field Street • Torrington, Conn.

Makers of
TORRINGTON NEEDLE BEARINGS

If you write maker identify as **IEN - 674**

TYPE J6K

A PRECISE WEATHER-PROOF PRESSURE VACUUM CONTROL

The Type J6K differential pressure and vacuum control is a precision-built sensitive unit. It is used widely to control system differentials of pressure or vacuum on various types of industrial machinery and equipment. Because it is weather-proof and shock-resistant and can be made water-tight on specification, the Type J6K fits into many applications where ordinary controls would fail. For more information and complete specifications on the Type J6K, send for Bulletin #6-1.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street, Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

If you write maker identify as **IEN - 675**

HALO Face Shield

light as a halo!

- NEW patented visor position hinge locks visor in "raised" or "working" position.
- Full protection from flying particles, chemicals, splashes, sparks, etc.
- Rugged and sturdy yet lightweight.
- Visors available in 4, 6 and 8 inch depths and .020, .040 and .060 thickness.
- 3 Models of headgear — Large spark protector, small spark protector and no spark protector.

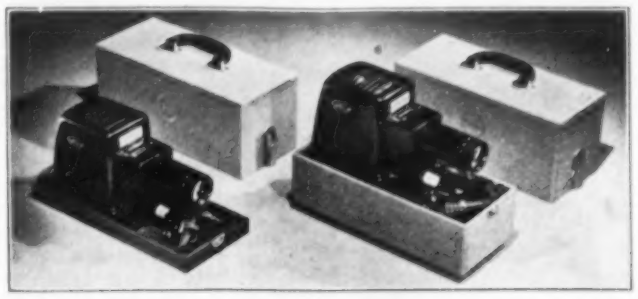
Write for LITERATURE and PRICES.

UNITED STATES SAFETY SERVICE CO.
KANSAS CITY 6, MISSOURI . BRANCHES IN PRINCIPAL INDUSTRIAL CITIES
In Canada PARMELEE, LTD. Toronto — Montreal

If you write maker identify as **IEN - 676**

PROJECTING . . Color slide units designed for 200 and 300 watt lamps

Source: EASTMAN KODAK CO.
341-45 State St., Rochester 4, N. Y.



Portable assemblies

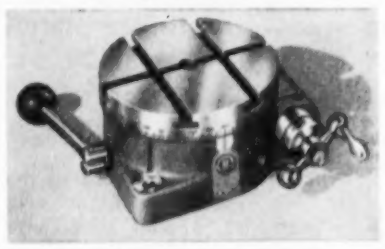
Highlux II, to the left in the illustration, and Highlux III, to the right, are two new color slide projectors in the company's Kodaslide line. The former takes a 200-watt lamp. The latter is the same design but takes a 300-watt lamp and mounts on a combination carrying case base and ventilating blower. Both employ the company's Lumenized 5 in. f/3.5 Ektanon lens. The smaller unit can be converted by adding the blower base.

List prices are $36.50 and $56.50. The conversion base lists at $19.20. The carrying case, for the smaller unit that does not include a blower, adds $9.50 to its $36.50 list.

If you write maker identify as **IEN - 677**

INDEXING . . Rotary work table, 4½ in. diameter, hand operated

Source: SOUTH BEND LATHE WORKS
301 E. Madison St., South Bend 22, Ind.



Clamping lever is included

New table is designed to handle small work requiring precision positioning on drilling machines, milling machines, shapers or surface grinders. It has a top measuring 4½ in. in diameter and is rotated by turning the crank mounted on a worm at the side of the housing, shown at the right.

Each graduation on the crank spindle represents a table movement of 3 minutes. One complete revolution of the crank turns the table 5 degrees. The graduated spindle collar can be positioned to zero after loosening a knurled thumbscrew. Graduations are permanent on the edge of the table in 1-deg. divisions. Equipment includes eight work clamping bolts with nuts and washers to apply in the three T-slots on the top.

Identify as **IEN - 678**

Due to be available in about six months is a new proportioning instrument known as the Lindberg Carbotrol. It will permit a heat treater to set his furnace atmosphere in equilibrium for any steel. The equipment has been demonstrated and is now in field application tests prior to regular announcement. A technical report is available now.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 679**

SAVE YOUR OIL, MONEY AND MACHINERY WITH HILCO LUBRICATING AND INDUSTRIAL OIL MAINTENANCE EQUIPMENT - - -

A COMPLETE LINE OF EQUIPMENT FOR RECLAIMING, FILTERING, PURIFYING AND RE-REFINING OIL

★ Hilco units are available for continuous or batch operation. You can keep your lubricating and industrial oils clean and recover large quantities of oil at low cost.

Whenever Oil is used it becomes contaminated — must be discarded or conditioned for further use

There Is a **HILCO** to do This Job for You

Cleans Oil, Reduces Down Time, Increases Production!

★ Tell Us About Equipment You Are Operating and We Will Forward FREE Literature and recommendations.

OIL PURIFIER DIVISION
THE HILLIARD CORP.
35 W. 4th ST. • ELMIRA, N. Y.

IN CANADA — Upton-Bradeen-James, Ltd.
990 Bay St., Toronto, 3464 Park Av., Montreal

If you write maker identify as **IEN - 680**

DESIGN FOR Ruggedness

HARTWELL
H-5150 Flush Latch

The new H-5150 flush latch is ideal for any use calling for a large, rugged latch. Its bolt contains a spring loaded button that allows for variations in closure contact due to misaligned doors and frames. The 1¼" x 1½" operating trigger makes this latch easy to open even when operator is wearing heavy gloves or mittens. The H-5150 is made of stainless steel, coated cold rolled steel or heat treated aluminum in various offset combinations for different door and frame thicknesses.

Write for new Hartwell Plush Latch and Hinge Catalog.

HARTWELL COMPANY
9035 VENICE BOULEVARD, LOS ANGELES 34, CALIFORNIA

If you write maker identify as **IEN - 681**

FIRST IN FABRICATING "KNOW-HOW"
TEFLON*----KEL-F†
And the Most Modern Facilities for Rapid, Low-Cost, Close-Tolerance Production

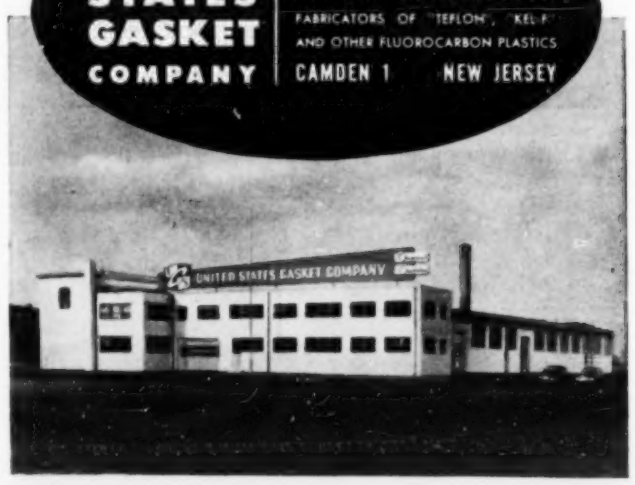
The United States Gasket Company began fabricating TEFLON, years ago when it was first offered commercially, and has pioneered its application to countless purposes throughout industry. You profit from this unusual experience and "Know-How," when you specify "TEFLON or KEL-F" fabricated by the United States Gasket Co."

You can be sure of uniform high quality, accuracy of dimensions, prompt attention to your requirements whether on stock (the most complete line in the country), or on custom machined or molded parts.

Get the advantages of these fluorocarbon plastics—fabricated by U.S.G. The finest dielectrics especially for high frequency service, chemically inert, non-contaminating, non-gassing, zero water absorption, unaffected by humidity, tough, resilient, serviceable from −110°F. to 500°F. without change in critical electrical or physical characteristics. Write for Bulletin No. 300.

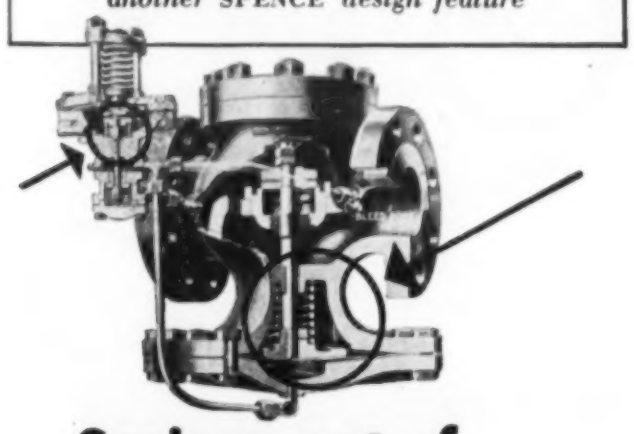
*duPont's trademark for its tetrafluoroethylene resin
† Trademark, M. W. Kellogg Co.

UNITED STATES GASKET COMPANY
FLUOROCARBON PRODUCTS DIVISION
FABRICATORS OF "TEFLON", "KEL-F" AND OTHER FLUOROCARBON PLASTICS
CAMDEN 1 NEW JERSEY



If you write maker identify as IEN - 683

another SPENCE *design feature*



Springs out of path of steam

In the Spence Regulator, the springs are out of the path of the steam or other fluid flowing through the valve. They operate at low unit stress for exceptionally long life. Learn more about Spence design features that cut costs of pressure and temperature control. Send for Bulletin 500.

SE 110

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

If you write maker identify as IEN - 684

GALS. PER MINUTE
FEET PER HOUR
% SHRINKAGE

All measured electrically with

WESTON TACHOMETERS

Precise indications from ONE rotating shaft

Simply mount the compact a-c or d-c Weston generator at the rotating shaft or part, and wire to one or more indicators placed wherever desired. Indicators can be calibrated for any function of R.P.M. Speed changes indicated instantly and smoothly without pointer oscillation.

Speed-ratio from TWO rotating shafts

New WESTON Tachometer indicates the speed-ratio of 2 rotating shafts or parts. Indicates directly the speed-ratio of rolls, the % stretch or shrinkage of textiles, elongation of metals, etc. Remote and duplicate indications possible, with scale marked in desired units.

New SLOW-SPEED Electrical Tachometer

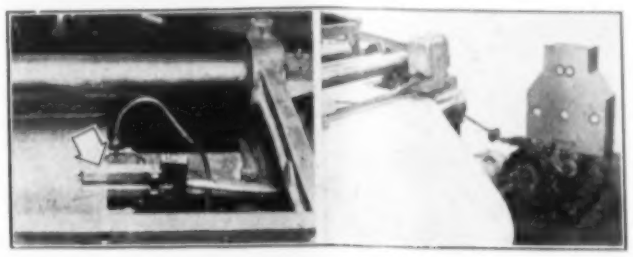
Expanded scale accurately indicates speeds as low as 1 R.P.M. without pointer oscillation. No intermediate gearing employed. Complete data from your local WESTON representative, or by writing Weston Electrical Instrument Corporation, 627 Frelinghuysen Avenue, Newark 5, New Jersey, manufacturers of Weston and TAGliabue instruments.

WESTON *Instruments*

If you write maker identify as IEN - 686

CONTROL . . Pneumatic equipment holds side alignment in a moving web

Source: W. T. HOWALD MACHINE WORKS
180-84 Sigourney St., Brooklyn 31, N. Y.



Company makes the installation

Webs of textile, plastic, paper, metal are held in lateral alignment as they feed from a supply roll into a machine by the company's new Frankel Edgeguide. It consists of an adjustable pneumatic nozzle with two opposed heads. They ride above and below the web in a pivoted connection that permits swinging them in toward the web center or out toward the edge. The closer they are to the edge the greater the sensitivity of the action.

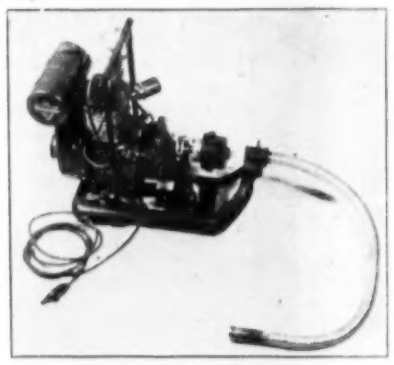
Outward movement of air through these nozzles serves to actuate pneumatic control equipment mounted at the end of the supply roll shaft where a pneumatic cylinder connects for the lateral positioning. If the web edge varies in position at the nozzles this cylinder will act to move the supply roll to one side or the other in correcting action.

There is no physical contact between the web and the nozzle and, as a result, there is no wear. Cylinder movement is obtainable from $\frac{1}{16}$ to 20 inches. Power range is from ounces to 5,000 lb. in push or pull. Accuracy is within 0.012 in. on webs that tend to "wander" as much as ⅛ in. in 100 in. of web length at 750 ft. per minute.

If you write maker identify as IEN - 687

CLEANING . . Flexible shaft machine with engine drive to clean pipe lines

Source: OHIO TOOL & ENGINEERING CO.
145 N. Spring St., Springfield, Ohio



Opens clogged passages

New design of the company's portable Eel weighs 66 pounds. It is equipped with a 1½-hp. gasoline engine and 6 to 1 geared connection for its drive in the place of the usual electric motor. Application can be made, where electric current is not available, in waste lines, sewers and field tile measuring 1¼ in. in diameter or more. The drive includes a safety release between the engine and the flexible shaft.

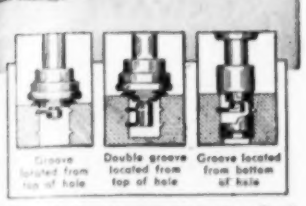
The equipment is available with two weights of shaft, regular and heavy duty. The latter is a double assembly consisting of a rotating inner core and a stationary outer cover to protect the operator in case of breakage. Flexible connections are used to join lengths of the shaft.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 688

Waldes Truarc Internal Grooving Tool
for precision cutting of internal grooves in bores and housings
FAST! ECONOMICAL! NEEDS NO SKILLED LABOR!

Manufactured under U. S. Pat. 2,411,426



Internal groove-cutting becomes the simplest of operations with Waldes Truarc Internal Grooving Tool. Easy to adjust—easy to operate...readily adaptable to individual requirements.

Designed for use in any hand drill or automatic drill press and screw machine...assures a concentric recess without injury to metal. Operates by fingertip pressure—especially suitable for unskilled operators.

The Waldes Truarc Grooving Tool when used in an electric or pneumatic hand drill, can be taken to the job eliminating disassembly and excessive handling...resulting in all-around savings in time and costs!

Write now for descriptive brochure giving mechanical details, cutting sizes...extra features

WALDES TRUARC GROOVING TOOL
WALDES KOHINOOR, INC.
47-16 Austel Pl., Long Island City 1, N.Y.

If you write maker identify as IEN - 689

"BIG SAVINGS OF LABOR AND MATERIAL"

with portable Greenlee Hydraulic Conduit Bender

Quickly produce your own conduit bends *right on the job*. With a GREENLEE Bender *one man* in but a few minutes makes smooth, *accurate* bends in pipe up to 5", rigid and thin-wall conduit. Many owners report time and labor savings from 50% to 90% . . . and cost of many manufactured bends and fittings completely eliminated. Get facts now on this tool that often pays for itself on the first job.

FREE BENDER BOOKLET with complete data on GREENLEE Benders for pipe, conduit, tubing. Write today, Greenlee Tool Co., 1861 Herbert Ave., Rockford, Illinois.

If you write maker identify as IEN - 690

DON'T SCRAP IT!

LET "GLOVCO" RECONDITION IT

(LEATHER OR FABRIC)

DUST COLLECTOR BAGS • CONVEYOR BELTING
TARPAULINS • DROP CLOTHS • FILTER PADS

At a mere fraction the cost of replacement, we clean and professionally repair these and many other items, restoring them to new usefulness. Our pick-up and delivery plan in most industrial areas eliminates mechanical difficulties making this reconditioning plan work smoothly and to your complete advantage.

DIRTY WORN WORK GLOVES RECONDITIONED LIKE NEW

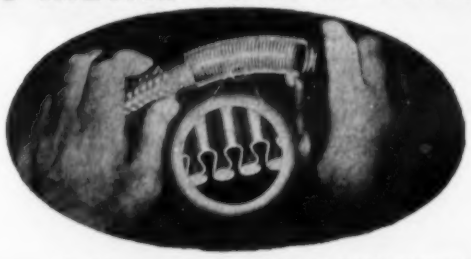
BEFORE AFTER

Our work glove reconditioning plan includes: pick-up, cleaning and sterilizing, repairing, reshaping, pairing, packaging and delivery. Users of the service record savings up to 49% in work glove costs. We will be glad to demonstrate this service at no cost to you. Representatives in all industrial areas

U. S. INDUSTRIAL GLOVE CORP.
9354 Roselawn Ave., Detroit 4, Mich.

If you write maker identify as IEN - 691

WHICH OF 1001 USES FOR THIS METAL HOSE IS YOURS?



Are you overlooking an opportunity to improve the performance, life, or salability of your equipment with metal hose?

Yours may be one of the hundreds of undiscovered uses for metal hose—especially for flexible, pressure-tight TITEFLEX® Metal Hose.

The special construction of Titeflex, and the variety of alloys, sizes, and fitted lengths enable you to combat severe temperature, pressure, and corrosion conditions where a flexible connection is necessary.

For maximum results, ask us for design suggestions and help in hose selection.

Titeflex Let Our Family of Products Help Yours

MAIL COUPON TODAY

TITEFLEX, INC.
506 Frelinghuysen Ave., Newark 5, N. J.

Please send me information about Titeflex Metal Hose and its applications.

NAME _____
TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE _____ STATE _____

If you write maker identify as IEN - 692

HOW YOU CAN *hear better* TO TELEPHONE

Loudness of Noise Reduced 50%* Inside a

BURGESS-MANNING

Acousti-Booth

- Thick walls of sound absorbing material, patented design, and craftsmanlike construction reduce the loudness of noise by 50%*... leaving a zone of quiet for ease of telephoning.
- Doorless construction makes for a light, airy, well ventilated booth ... easy to keep clean ... low maintenance.
- Easy to move ... Suited to any noisy location ... Wall and floor models ... Handsome in appearance.

Write for Bulletin 103A

Model 211 Floor Model

* *Based on studies by a prominent research organization.*

BURGESS-MANNING COMPANY

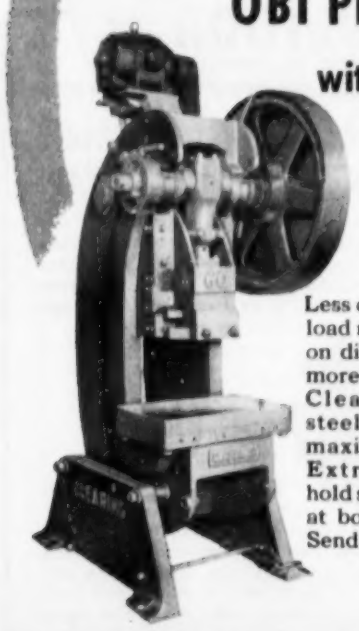
Architectural Products Division

5970-A Northwest Highway, Chicago 31, Illinois

If you write maker identify as IEN - 693

You'll Get Better Service from

OBI PRESSES with WELDED STEEL FRAMES



Less deflection under load means less wear on dies, and cleaner, more accurate work. Clearing's welded steel frames assure maximum rigidity. Extra long guides hold slide firmly even at bottom of stroke. Send for bulletin.

CLEARING MACHINE CORPORATION

6491 WEST 65TH STREET • CHICAGO 38, ILLINOIS

If you write maker identify as IEN - 694

JABSCO

SELF PRIMING PUMPS

Patented and Patents Pending

the pump with the DUPONT NEOPRENE impeller (oil resistant)

BRONZE, STAINLESS STEEL & IRON CONSTRUCTION —CAPACITY TO 50 GALLONS PER MINUTE

1 MORE CAPACITY—for its weight, size and price.

2 SELF-PRIMING—starts instantly with high suction lift.

3 ONE MOVING PART—tough, long-lived.

4 GEARLESS—impeller outlasts metal gears.

5 TROUBLE FREE—simple construction.

6 ECONOMICAL—low cost—low maintenance.

LIQUID TRANSFER AND CIRCULATING FOR ALL INDUSTRIES

JABSCO PUMP COMPANY

2031 N. Lincoln Street • Burbank, California

If you write maker identify as IEN - 695

MUFFLER . . Exhaust silencer for pneumatic equipment, pipe to 2 in.

Source: ALLIED WITAN CO.
4313-17 W. 138th St., Dept. B, Cleveland 11, Ohio

No maintenance

Exhaust noise can be eliminated in connection with the operation of equipment such as air cylinders, vacuum pumps, pneumatic motors, foundry machines, air operated vises, pneumatic lifts and presses by application of this new Radial-Flow muffler. It is available in a range of pipe sizes from ⅛ to 2 in. with outside diameter at 1⅝ to 5 in. and length from 3½ to 19 inches. Each size is properly proportioned for the pipe size on which it is to apply.

Exhaust air entering the muffler is trapped by a screened inlet chamber. It rebounds against a cushion in the end of this chamber and moves outward at an angle through ports in the chamber to strike the screened housing at an agle. A part of the air moves outward at this point through the porous housing body. Other portions rebound inward to strike at other places and also at the cushioned end. The air moving steadily outward issues from the body screen noiselessly.

Rapid deceleration of air velocity inside the housing lowers the temperature, causes precipitation of any vapors that may be present, preventing them from blowing into the surrounding work area. The substantially closed construction retains scale and dirt within the housing.

If you write maker identify as IEN - 696

FILING . . Sharpening fixture for circular saw blades of any tooth type

Source: SPEED CORP.
510-14 N. E. 73rd Ave., Portland 16, Oregon

About $7

This new fixture, known as the Speed Saw Filer, clamps to a work bench and mounts interchangeable arbors to take circular saw blades. A worker without previous experience can sharpen satisfactorily any type of cutter teeth. The fixture is supplied with one triangular file, four mandrels and operating instructions.

Identify as IEN - 697

Wood bumpers are being taken from loading dock areas to be replaced by a new assembly of rubber fabric pieces measuring 4½ by 10 inches. They are held together in a compressed pile by bronze rods and end brackets made of steel angles. Edge to edge of the angles measures 38 inches. Several of these assemblies can be placed end to end to absorb the shock of backing trucks. The new design started out in Seattle in a tug boat bumper that Max Pollock originated.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 698

SPEED UP SLOW-FLOW MATERIALS

TARS
PLASTICIZERS
WAXES
MOLASSES
GLUES
RESINS
GREASES
GUMS . . ETC.

ACRAWATT ELECTRIC

DRUM HEATERS

FIT ALL STANDARD 22¼" DRUMS

- Proven Acrawatt THINSTRIP Construction.
- 3 Heats: 3000 Watts 230 Volts.
- Fast Heat Transfer.
- Aluminized Steel Encased.
- Enclosed Wiring Terminals.
- Low Radiant Loss.
- Fully Insulated.
- Easy to Install and Remove.

Kill time-consuming, costly slow-flow of viscous materials. Slip one or more Acrawatt Drum Heaters on your drums. Make cloggy, sluggish contents get a move on. Go on and off in a jiffy. Safe and simple to apply and operate. Use singly or in multiple. Save with Acrawatt reliability, long life ruggedness and efficiency. Order today.

ORDER NOW

EA. $19.50 F.O.B. CHICAGO

Spot Shipment

Shipping Wgt. 10 Lbs.

FOR BETTER ELECTRIC HEATERS AT BETTER PRICES, LET US QUOTE

ACRA INDUSTRIAL ELECTRIC CO.

9905 PACIFIC AVENUE FRANKLIN PARK, ILLINOIS

If you write maker identify as IEN - 699

MINNESOTA

the O-ring with the FORMULA for strength, accuracy and uniformity

INJECTION MOLDED Minnesota O-rings meet specific requirements for hydraulic seals with close tolerances and without flash or trim. They function in air, gas or hydraulic systems including cylinders, hydraulic valves, water pumps, hoisting mechanisms, hydraulic brakes, bottling machines and engines. *Write for the O-Ring Bulletin.*

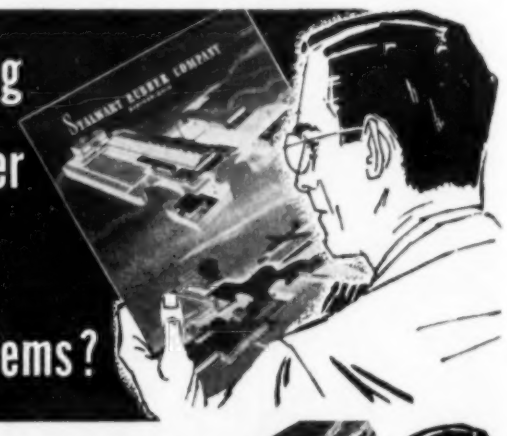
Also manufacturers of U and V seals . . . grommets . . . washers . . . and small parts made of rubber and synthetics including silicone, thickol and saran.

MINNESOTA RUBBER & GASKET COMPANY

3630 WOODDALE AVENUE • MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 700

having rubber part problems?



TEMPERATURES ranging from −75° to +225°F. present no problem for rubber parts fabricated from special STALWART stocks.

OIL and GASOLINE resistance is required in many rubber part applications. STALWART has compounds which provide maximum resistance to petroleum derivatives.

CHEMICALS of many types can be handled safely by rubber parts made from stocks engineered to resist them.

WEATHERING can cause trouble . . . but not when parts are made from compounds that withstand sunlight, dry cold, salt air, corrosive atmospheres, etc.

ABRASION also can cause rapid rubber part failure. STALWART abrasion-resistant stocks assure longer trouble-free service life.

SILICONE RUBBERS are suitable for applications involving extreme temperatures ranging from −110° to +500°F. STALWART is recognized as a Silicone rubber specialist.

For rubber parts custom-engineered to meet your needs, specify STALWART RUBBER. From more than 500 different special stocks, STALWART engineers can mold, extrude, die-cut or mandrel-build quality rubber parts in mass-production quantities.

985-SR

Write today for Catalog 51SR-1 for complete information.

STALWART RUBBER COMPANY

200 Northfield Road • Bedford, Ohio

If you write maker identify as IEN - 702

A-1035

EASTON

Furnace Cars

EASTON experience covers small and large capacity furnace cars for every requirement, including electric self-propelled cars for automatic continuous heat treating systems.

EASTON CAR & CONSTRUCTION CO. • EASTON, PA.

NEW YORK • PHILADELPHIA • PITTSBURGH

If you write maker identify as IEN - 703

SAFE--EFFICIENT MORSE DRUM HANDLING EQUIPMENT

Saves Production Time and Money . . .

ROTATOR DRUM TRUCK #500

Cuts costs of mixing, blending, tumbling, cleansing . . . rotates standard drum loads up to 500 lbs. at 10, 20 and 40 RPM. Also 1 and 5 gal. containers. Rocker frame for easy loading . . . Neoprene tread drive wheels, self-aligned bearings. Complete with ½ hp motor, gear reduction unit and tipping lever.

DRUM CRADLE TRUCK #55-O

Dispensing truck for 55 and 110 gal. drums. Retracting caster frame gives greater wheel base. Side opening for horizontal dispensing. Four wheeled for transporting drum. Rocker action eases loading.

DRUM LIFTING HOOK #41

Lifts steel drums and barrels up to 1000 lbs. Sturdy 7/16" double steel rods . . . 3" diameter lifting ring.

UNIVERSAL CARBOY ROCKER #10

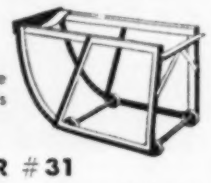
Combination truck and rocker for acid carboys from 18 x 18 x 23 to 20 x 20 x 25. Bottle outlet 20" above floor. Adjustable steel rods reinforce grip on carboy.

HAND TRUCK #100

One-man drum handling. Scientifically designed nose-piece and 2-plane construction throw weight directly onto large 10" roller bearing wheels. 1000 lb. capacity.

VERTICAL DRUM ROCKER TRUCK #44

For drums drained in vertical position. Picks up drums and rolls them over to reverse upright position. 4 wheels transport drum in dispensing position. Nose-piece safety catch and threaded hook lock drum to truck.



DRUM CRADLE TRUCK #40

Slip-proof rocker features . . . Nose-piece safety catch holds drum secure . . . non-skids on rocker keep load from sliding.

TIPPING LEVER #31

Tips all drums and barrels. Use with Morse Drum Cradle Trucks for one-man loading and unloading of heavy drums.

DRUM PLUG WRENCH #61

Remove or tighten 95% of all drum plugs. Special steel alloy. Available in bronze — 61 M.

Write today for free catalog showing complete line of Morse Drum and Barrel Handling Equipment

MORSE MANUFACTURING CO. INC.

755 WEST MANLIUS STREET, EAST SYRACUSE, N. Y.

If you write maker identify as IEN - 705

HEATING . . Floor mat is equipped with a built-in element

Source: LANE-BRANCH CO.
19-23 E. Santa Clara St., San Jose 16, Calif.

Warm feet for $24.50

Radiant-Feet trade names new electric foot warmer for use under a table or desk as shown in the illustration. The unit has a waterproof rigid base containing a low-watt element covered with frieze carpet in green, rose or gray. A switch in the 9-ft. extension cord provides three stages of warmth. The heater does not get hot. It acts to warm feet and legs so a person can be comfortable in a room that otherwise would be too chilly.

If you write maker identify as IEN - 706

DRAFTING . . Translucent paper to serve as master for reproduction

Source: RHINELANDER PAPER CO.
11 Rhine Ave., Rhinelander, Wis.

For clear sharp prints

Master White Print is a new special translucent paper that will take writing and printing and that transmits ultra-violet light used in duplicating work in Ozalid and Bruning type of printing equipment. The new paper erases well and lies flat. Its surface is clean and presents a close uniform formation with a high degree of optical opacity to assist in reading. The paper is available in three qualities in rolls and cut sheets.

If you write maker identify as IEN - 707

LIGHTING . . Capacitor operated tube, 110 volt input for flash photography

Source: DICO CORP.
622-26 Hanley St., Dept. N, Gary, Ind.

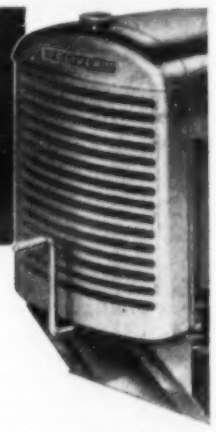
No batteries to carry

Dico-Lite Model I is a new assembly of xenon gas tube, capacitor, mounting stem and a lens equipped protective housing with an extension cord and plug for connection to a 110-volt ac. power source. Weight is about 2½ pounds. The flash will synchronize with any camera shutter having a built-in "O" or "X" instantaneous synchronizing action. The tubular stem is 1½ in. in diameter to apply in a standard mounting bracket on the camera. List price is $69.50.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 708

Name your fuel... Specify your size!



Chances are, there's a *modern*, dependable OLIVER power unit for your *exact* needs. Oliver engines are available in carbureted units for gasoline or LP-gas, or a *true* diesel that's easy to start on diesel fuel, in all these four sizes—73, 58, 48.5 and 31 horsepower.

Engine types are highly interchangeable in parts... completely interchangeable in dimensions in each size. All, except the 31-horsepower unit, are 6-cylinder engines. All are "overheads"...have controlled oil systems...by-pass cooling...shock-mounted instruments.

Open, housed, or bare units can be supplied, plus many extras for special applications. Write for full facts. The OLIVER Corporation, Dept. F14-1, 400 West Madison Street, Chicago 6, Illinois.

OLIVER

"FINEST IN FARM AND INDUSTRIAL MACHINERY"

If you write maker identify as IEN - 709

PROTECT YOUR PRODUCTS DURING SHIPMENT *with* S·S·White PLASTIC DUMMY SHIPPING PLUGS AND CAPS

Made of tough, non-brittle plastic. Available from stock molds in a wide range of sizes. Details in *BULLETIN P-5203*. Copy mailed on request.

CONTRACT MOLDING *in all standard thermoplastic and thermosetting materials.*

THE S·S·White PLASTICS DIVISION
DENTAL MFG. CO. Dept. NP, 10 East 40th St. NEW YORK 16, N. Y.
WESTERN DISTRICT OFFICE: Times Building, Long Beach, Calif.

If you write maker identify as IEN - 710

WHAT A DIFFERENCE

RAYMOND *Hydraulic*

Sheet & Strip FEEDING TABLE

Take a walk through your plant—and see how materials are handled at your machines. If you find makeshift arrangements, then it will pay you to investigate RAYMOND Sheet and Strip Feeding Tables! These Sheet and Strip Feeding Tables help prevent hazardous handling, reduce fatigue, increase output per worker. They enable skilled machine operators to devote their energy and time to the job you pay them to do.

With RAYMOND Sheet and Strip Feeding Tables, hydraulic power keeps the material at correct working level. The operator merely slides the material into position—no more stooping, tugging or lifting. What's more, these tables can be used to transport dies or move materials from storage to machines. Available with foot pump or electric-driven power pump—with flat or tilting top. Capacity: 2,000 lbs.

GET THE FACTS Mail the coupon and receive Bulletin 262—it describes RAYMOND Sheet and Strip Feeding Tables in detail!

The RAYMOND CORPORATION
3507 Madison St., Greene, N.Y.

Gentlemen: Please send me Bulletin 262

NAME _____ TITLE _____
COMPANY _____
STREET _____
CITY _____ STATE _____

If you write maker identify as IEN-712

BOSTITCH P4 STAPLING PLIER

WORKS WHERE OTHERS WON'T

Thin clinching blade → slips easily into tight places

In assembly operations . . . in sealing bags, cartons, corrugated wrappings . . . in making up containers . . . the Bostitch P4 Stapling Plier is a fast-fastening favorite. Loads quickly and easily . . . clinches staples securely with little effort . . . stands up under long, continuous use. Three models; for light, medium and heavy wires, with leg lengths from 5/32" to 9/16."

Write for Bulletin 222. Bostitch, 641 Mechanic Street, Westerly, R. I.

BOSTITCH®

Trademark "Bostitch" Registered U.S. Pat. Off., and Foreign Countries

AND FASTER fastens it better with wire

If you write maker identify as IEN-713

INTERSTATE

BUILDS A BETTER BOLT CUTTER

"Geared for Action"

HIGH LEVERAGE GIVES POWERFUL JAW ACTION

1. **A CAPABLE CONSTRUCTION TOOL:** rugged, well balanced; cuts rods, strands, bolts, rivets cleanly, easily . . . with less handle pressure!
2. **FORGED CUTTER BLADES:** Tool steel, heat treated; tough cutting edges.
3. **FORGED STEEL SIDE PLATES:** Can't twist! Light but rigid construction.
4. **FULL FORGED HANDLES:** Light, strong. Easy to grip.
5. **MASTER ENGINEERED:** Simple construction; no complicated adjustments or delicate parts. Performance-proved!

Send for complete data (4 sizes: 5/16" to 3/4") and Free Copy of "Care and Use of Bolt Cutters."

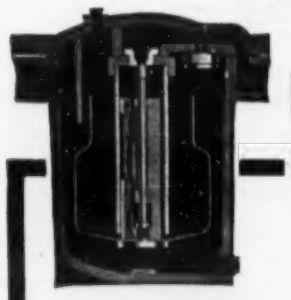
NTERSTATE DROP FORGE CO.

Special Products Division

4047 N. 27th Street, Milwaukee 16, Wisconsin

Makers also of Helwig-Hardy Hot Line Wire Cutters; Strap Shears; Button Presses; Squeezer Tongs; Punches; Wedglok Safety Connecting Links; Custom Drop-Forgings.

If you write maker identify as IEN-714



ILLINOIS STEAM TRAP

Simple—has only two moving parts

Valve Stem Travels Independent of Bucket—no other trap has this feature.

Instantaneous Valve Action—either wide open or tight shut—will not dribble on partial closing of valve under slow condensation rates.

Wire Drawing Impossible—valve has snap action.

Simple—moving parts are valve and bucket.

Cannot Air Bind—vents air continuously without loss of steam.

Cannot Blow Steam—always water sealed.

Surface Discharge—flushes out all grease and sludge.

Valve Seat—of special alloy, fully guaranteed.

Inspection Easy—without disturbing piping.

Works Equally Well on All Fluids—compressed air lines, air separators, air aftercoolers.

Write for Bulletin 35

Consult us on your requirements

ILLINOIS ENGINEERING COMPANY

INCORPORATED 1906

RACINE AVENUE AT 21ST STREET • CHICAGO 8

If you write maker identify as IEN-715

HANDLING . . Strip coil grab to lift and carry coils to 5,000 pounds

Source: DIXON AUTOMATIC TOOL INC.
2302-23rd Ave., Rockford, Ill.

One man applies it

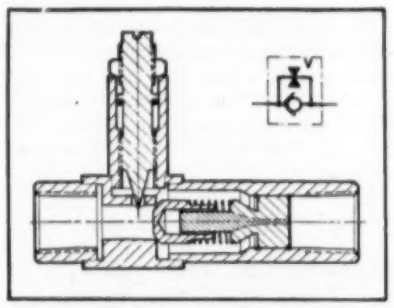
Two new sizes have been added to the company's strip coil grab, previously described IEN-12387-51. One of the new units will handle coils to 12 in. in width. The second has capacity to 24 inches. A safety lock maintains positive grip on the coil during the time it is suspended.

A chain is threaded from the upper end of the diagonal guide, in the center of the assembly, over a roll near the inner end of the horizontal arm, back to a second roll back of the finger end of the vertical arm and up to the load hook. Lifting effort draws the two arms tightly against the coil to hold it while it is being up-ended and to carry it on the load foot at the bottom of the arm that stands vertical in carrying position.

If you write maker identify as IEN-716

VALVE . . Check and needle unit throttles flow in one direction only

Source: FLUID CONTROLS INC.
1282-86 N. Center St., Dept. A, Mentor, Ohio



For oil to 3,000 pounds

Free flow is permitted in one direction, from left to right, in this new oil Restrictor valve. Reverse flow closes the check valve in the main passage so oil moving in reverse direction must pass a port controlled by an adjustable needle valve mounted at right angles to the main flow port. It extends out from the main body.

The valve is made with a steel body in copper brazed assembly. Sizes are ¼, ⅜ and ½-in. pipe. Flow, in restricted direction on capacity setting, is 3, 5 and 9 gpm. at 200-lb. pressure. Overall length is about 3⅛ to 3¾ inches.

Identify as IEN-717

Foley Mfg. Company suggests that you give it information on the type and number of saws you use for both wood and metal cutting in the form of circular saws, band saws and hand saws so it, in turn, can give you its recommendations of the equipment with which to keep these saws in first class cutting condition. The company has made up a four page form with illustrations and spaces for you to put down your data which it will hold in confidence. It will send you a copy of the form on request and will make its recommendations without obligation on your part.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-718

NOW FOR ALL YOUR NARROW-AISLE . . . CLOSE-QUARTER OPERATIONS

AUTOMATIC'S

NEW COMPLETE LINE OF

Transveyor RIDING TYPE ELECTRIC TRUCKS

NEW RIDING-TYPE ELECTRIC STACKER

2500 LBS. OR 4000 LBS. CAPACITY—48" LONG LOAD. Lightweight, compact, maneuverable, rugged. A low-cost stacker for extreme close-quarter lifting, moving and stacking in 6 foot aisles...on limited capacity floors and elevators.

NEW RIDING-TYPE ELECTRIC PALLET TRUCK

4000 LBS. CAPACITY—48" LONG LOAD. An overall length of only 29½" (less forks) makes possible right angle storing of 48" x 48" loads from aisles as narrow as 6½ feet.

NEW RIDING-TYPE ELECTRIC PLATFORM TRUCK

4000 LBS. CAPACITY. Short, and highly maneuverable, the Transveyor Platform Truck speeds operations in congested areas in plant or warehouse and on narrow, crowded shipping docks.

Only **Transveyors** have Balanced Action! *Balanced Action automatically equalizes the load on both wheels regardless of floor conditions. Write today for full details!*

Automatic®

WORLD'S LARGEST EXCLUSIVE BUILDER OF ELECTRIC INDUSTRIAL TRUCKS
109 W. 87th Street, Dept. A-3, Chicago 20, Illinois

If you write maker identify as IEN-719

AMAZINGLY COMPACT GEARING!

The most frequently cited reason for specifying Cone-Drive gears and speed reducers is "their amazing compactness."

The reason why Cone-Drive gears are so compact is that they are 'double-enveloping'. They thus have more teeth in continuous contact and load per tooth is distributed more evenly over each tooth face.

As a result, smaller gears—up to ⅓ smaller center distances—can be used to carry the loads when Cone-Drive gears are specified.

If space saving is one of your design objectives, it will pay you to look into Cone-Drive gears and reducers . . . NOW.

They can be a big help to you and they are available in a wide range of standard sizes and ratios.

CONE-DRIVE GEARS Division, Michigan Tool Company

DOUBLE ENVELOPING GEAR SETS & SPEED REDUCERS

7171 E. McNichols Road • Detroit 12, Michigan

If you write maker identify as IEN-720

ALUMINUM

LOUISVILLE LADDERS

The maintenance departments' choice for rugged, durable equipment . . . and there's safety in Louisville patented construction. Rungs are reinforced and securely riveted to the side rails . . . the most effective way to prevent rung turning and loosening . . . facts proven every day in all types and sizes of plants throughout the country.

The complete line of standard ladder products. Try Safe-Weight . . .

- Extruded aluminum side rails
- Large diameter corrugated aluminum rungs
- Reinforced rung assemblies
- Riveted Construction
- Complete accessories

Your assurance of quality, heavy duty equipment.

AVAILABLE THROUGH BETTER DEALERS

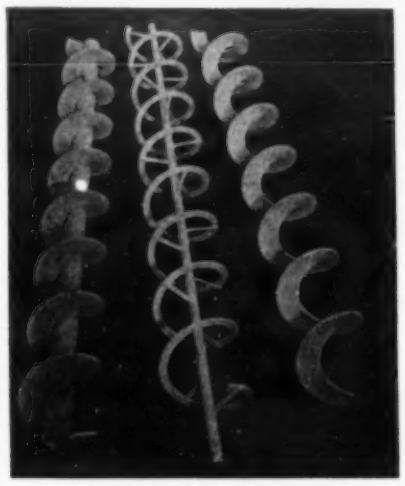
LOUISVILLE LADDER COMPANY

1101 W. Oak St. — Dept. 11 — Louisville 10, Ky.

If you write maker identify as IEN-722

WORMS AND SPIRALS

to bore, convey, extrude, feed, process



Let us make them for you to your specifications or supply them from stock in standard designs immediately

Send your blueprints for quotation

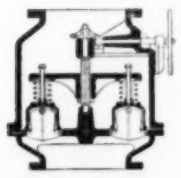
JAMES EAGEN & SONS
WEST WYOMING, PA.

If you write maker identify as IEN-723

cochrane

MULTIPORT VALVES— ENDURING PROTECTION FOR STEAM SYSTEMS

In any vapor system where pressure relief to atmosphere is paramount to safety, and maximum savings are important, a Cochrane Multiport Pressure Relief Valve is a blue-chip investment. A Multiport Valve cannot jam, stick, or clog. They do not "pop" open to dump the system and waste steam and money; never slam shut to cause hammer and vibration in the line. They are easily adjusted to desired pressure, can never be set-up to permit dangerously high pressure.



Operation is simple, positive. As pressure rises above set pressure the multiple valves e-a-s-e open, meter-off *only* the over-pressure, then close gently. Abrupt pressure changes never occur, yet equipment is always protected.

Extra valve area gives extra protection. The Multiport principle, with from three to sixteen ports in each valve, always provides greater port area than the area of pipe for which it is designed.

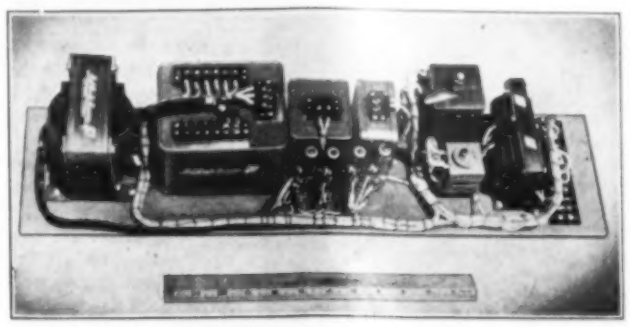
Find out how Multiport Valves can fit into your plant, to give complete protection, save steam, reduce maintenance. Send for new Multiport Valve Catalog today, address:

cochrane corporation 3152 N. 17th Street Philadelphia 32, Pennsylvania

If you write maker identify as IEN-725

CONTROL . . Magnetic amplifier builds weak signal for practical use

Source: KARL-DOUGLAS ASSOCIATES
3158-62 W. El Segundo Blvd., Hawthorne, Calif.



Informative folder upon request

Illustrated is a typical application for the company's new magnetic amplifier in a voltage regulator assembly for an engine driven three phase electric generator. The new amplifier performs the function of a vacuum tube. At the same time, it is not affected by shock and vibration.

Construction consists of a saturable core reactor and a selenium rectifier, the latter preventing the reactor from becoming demagnetized by ac. voltage supply. Units can be designed to operate from any single or polyphase ac. supply voltage varying from a few volts to several hundred at frequencies from the lowest power employed to megacycles.

Typical applications include control and positioning of variable speed motors and regulation of both ac. and dc. generator voltage, amplification of minute power inputs from thermocouples or strain gages into measurable quantities, time delay control, servo mechanisms, automatic battery charging, arc welding control, hydraulic transmission control, metering of dc. voltages and currents, rectifying, audio amplifying, winding control or synchronizing action to keep a number of motors operating together within pre-determined limits. Under certain conditions amplification of 1 to 1,000,000 is possible.

If you write maker identify as IEN-726

STORING . . Vertical assembly, rotating trays and capped glass jars

Source: UNION METAL MFG. CO.
1430-34 Maple Ave. N. E., Canton 5, Ohio

About 12 in. diameter

Vu-O-Matic is a new rotary stand assembly of 3, 5 or 8 trays equipped with 4, 8 or 16-oz. capped glass jars. The stand and tray are finished in green enamel. Special assemblies can be specified.

The jars are intended to hold small parts and protect them against dust or moisture while making them visible for quick selection. Each jar can be brought around to "front" position and can be lifted from its tray without disturbing the others. The jars can be weighed with their contents for inventory purposes, since the weight of the jar alone is constant for quick deduction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-727

FLEXIBLE AS STRING . . . GLASS-CLEAR . . . FEATHER-LIGHT . . . FULLY RESISTANT TO ACIDS, ALKALIES, OILS, GREASES, AND WATERS . . . MIRROR-SMOOTH . . . TOUGH AS LEATHER . . . NON-OXIDIZING . . . NON-TOXIC . . . LONG-WEARING . . . FOR THE TRANSMISSION OF LIQUIDS, GASES, AND SEMI-SOLIDS.

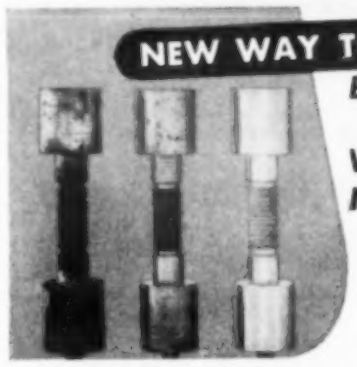
TYGON Tubing is available in six standard compounds — continuous lengths — bores up to 2" ID — with or without outer braid reinforcement. Special compounds and sizes made to order.

Write, today, for detailed information and technical Bulletin T-77!

232C

U. S. STONEWARE
AKRON 9, OHIO
PLASTICS AND SYNTHETICS DIVISION

If you write maker identify as IEN-728



Without VPI With VPI

NEW WAY TO STOP RUST

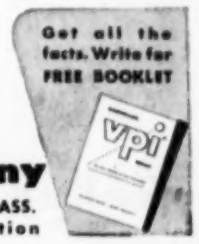
Easily! Quickly! Without Slushing

MARVELLUM VPI WRAP

Paper coated with a Volatile Corrosion Inhibitor

Look at these steel samples — they tell the story. After 3 years of unsheltered storage outdoors in an industrial marine atmosphere, only the VPI wrapped sample on the right is still bright and clean. The untreated sample on the left was wrapped in plain kraft, the middle one treated with a good rust-preventive oil and wrapped in Grade A barrier material. All were overwrapped with kraft-asphalt paper. *Your* steel or aluminum parts can be equally well protected from corrosion. VPI, developed for government use during the war, is now available to everyone. Economical, easy to use, VPI can save you time and money.

Marvellum VPI is available in sheets, envelopes or special containers. Marvellum has complete facilities under one roof for designing, producing and coating VPI Wraps. Also makers of a wide range of other barrier materials to meet your needs for product protection. Distributors in all major cities.



The Marvellum Company
22 APPLETON STREET HOLYOKE, MASS.
First and Foremost in VPI Protection

If you write maker identify as IEN-729

There's a new way to increase production

These *Free* booklets give the facts on ABRASIVE-BELT GRINDING

"Abrasive-Belt Finishing"—Explains how abrasive-belt machining provides low-cost, rapid finishing of flat and irregular shaped surfaces. Discusses: (a) grinding of work requiring close dimensional accuracy; (b) contact-roll grinding on metals of various hardness; (c) grinding of irregular contours; (d) selection of abrasive belts.

"Case Histories"—Thirty-six representative examples showing how abrasive-belt machining upped output and slashed costs on many different materials and parts (aluminum, steel, iron, plastics, etc.) in a wide range of industries. Gives factual "before and after" data—compares costs—cites actual savings in time.

Catalog—PORTER-CABLE Abrasive-Belt Machines—Specifies type of machine best suited to speed production in factory, job shop and tool room on all these operations: close tolerance grinding on flats—squaring—cylindrical surfacing — contour grinding — deburring — beveling and chamfering—forming radii—smoothing parting lines, flashings, welds—polishing.

Get All the *Facts*
mail coupon today!

PORTER-CABLE MACHINE CO.
1201 N. Salina St., Syracuse 8, N. Y.

Please send me the following free literature on abrasive-belt machining:

- ☐ "Abrasive-Belt Finishing"
- ☐ "Case Histories"
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Name .....
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City ..... State .....

Mfrs. of SPEEDMATIC and GUILD Electric Tools
In Canada write Strongridge, Ltd., St. Catharines, Ont.

If you write maker identify as IEN - 731

NEW POWER CABLE BOOKLET . . .

Discover these big savings with G-E Interlocked Armor Cable

- Savings on steel
- Savings in layout time
- Savings in handling and installation time
- Savings on space requirements
- Savings on material costs

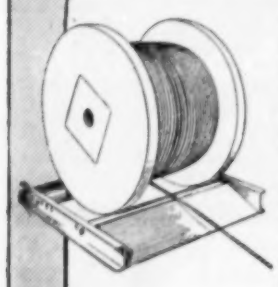
Send for this new, free 20-page booklet for the complete savings story on G-E interlocked armor cable—the cable built for today's power requirements. For your copy, write Section W10-142, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

GENERAL ELECTRIC

If you write maker identify as IEN - 732

Simple as A B C



Handle heavy reels easily and safely; remove wire or cable from top or bottom, front or back of reel with

ROLL-A-REEL

Low slanted front and positive front lock insure quick loading or unloading.

Eliminate jacks and cumbersome handling.

Style A: 2,000 lbs. cap. 37.50
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Carried easily to reels, job or storage.
Sold through wholesalers only.

WRITE TODAY FOR DETAILS

ROLL-A-REEL
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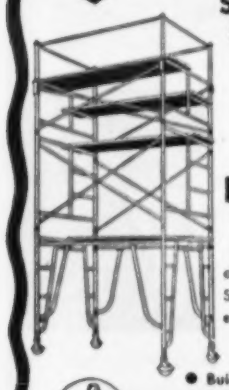
CINCINNATI 2, OHIO

If you write maker identify as IEN - 733

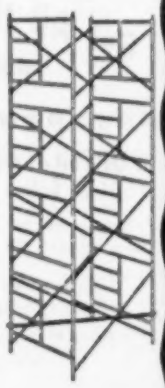
WORLD'S FASTEST, SAFEST SCAFFOLDING WACO

ROLLING TOWERS
Speedy and simple for maintenance work!

SECTIONAL SCAFFOLDING
Saves hours in scaffold erection time!



BIG WACO FEATURES!



Only WACO features the original, proven "SPEEDLOCK". Speed, safety and convenience in scaffold assembly.

- Built-in, floating coupling pins
- Built-in ladders
- Pivoted cross-braces
- Heavy duty rubber tire wheels
- Brake-type casters

Phone your local WACO distributor today for a free demonstration. Distributors in all principal U.S. and Canadian cities.

Write for free file folder

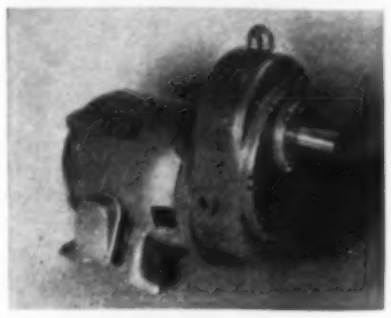
SALES-RENTALS WACO

WILSON-ALBRECHT CO., INC.
DEPT. R, 3565 WOODDALE AVE.
MINNEAPOLIS 16, MINN.

If you write maker identify as IEN - 734

MOTOR . . Geared head design, 1 to 30 hp., ratios 2.24 to 4.17 to 1

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.



Ask for Bulletin 3600-H-1

Type B designates a new line of single reduction geared head motors in the company's Lifeline motor design, to include AGMA Classes I and II. The gearing is single reduction for application on standard NEMA frame size motors. The output shaft can be offset upward, downward or to either side.

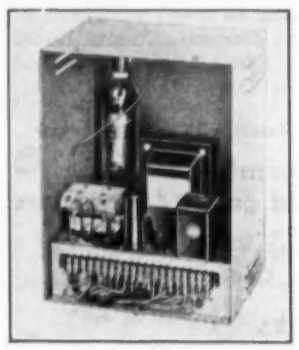
The gears ride in an enclosed housing and are lubricated by an oil slinger on the end of the ball bearing motor shaft. A seal between the motor bearing and the windings and a second seal on the output shaft keep oil in and dirt out.

The motor is available for operation on 220, 440 or 550-volt three-phase ac. It also can be specified in a range between 1 and 15 hp. dc. for 110 and 220 volts.

If you write maker identify as IEN - 735

DRIVE . . Variable speed control for fractional horsepower dc. motor

Source: ARROW-HART & HEGEMAN ELECTRIC CO.
101-5 Hawthorn St., Hartford 6, Conn..



For specified use

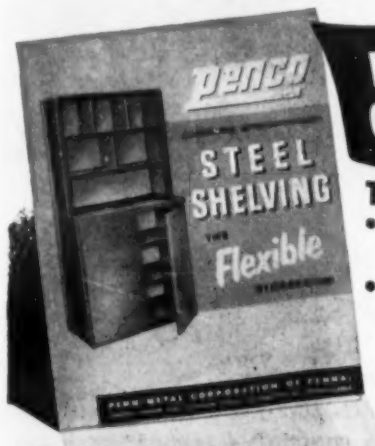
New assembly of electronic components and accessory parts provides for variable speed control of a dc. series wound motor from a 110-volt ac. power source. The motor makes use of both ac. and dc. output from a single thyratron tube. The control provides for stepless speed adjustment in a range between 300 and 3,500 rpm. when an optional dual range assembly is specified. The motor can be started, stopped or dynamically braked. It accelerates rapidly to a predetermined speed when the power circuit is closed.

Identify as IEN - 736

Electronic equipment, in connection with a conveyor belt, permits weighing materials in one or more conveyor lines to separate or common points of delivery. Minneapolis-Honeywell tells us of the new equipment, adds that measurements can be transmitted over a considerable distance to a foreman's office or a central control panel. Chart records can be maintained. Each conveyor belt rides over a set of three idlers that form a wide base trough. Force exerted on these idlers is measured by a strain gage. The weight of the belt and other component parts is subtracted electrically. The final figures, representing weight of the material, are fed to an electronic recorder at a suitable location.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 737



NEW! COMPLETE!

TELLS HOW...

- YOU CAN HAVE "CUSTOM-TYPE" STORAGE EQUIPMENT AT STANDARD SHELVING COST!
- YOU CAN STEP UP STOREROOM EFFICIENCY—SAVE TIME, LABOR, MATERIALS AND SPACE!

penco

SHELVING GUIDE

Here is a complete new guide to money-saving steel storage equipment—shelving, parts bins, tool racks, service counters, etc. Offers widest selection of *standard* shelving available—almost unlimited combinations of types, sizes and accessory parts to meet every storage need! Send for *free* catalog No. S-300.

PENN METAL CORPORATION OF PENNA. FOUNDED 1869
80 OREGON AVENUE PHILADELPHIA 48, PA.

A COMPLETE LINE OF STEEL LOCKERS, SHELVING, CABINETS

If you write maker identify as IEN - 738

FREE BULLETIN

shows **20 WAYS** to handle **SPECIAL LOADS**

This illustrated booklet summerizes Elwell-Parker's 45 years' experience in solving *unusual* materials handling problems. If your loads are "different", send for this booklet about specially designed industrial trucks and special truck attachments.

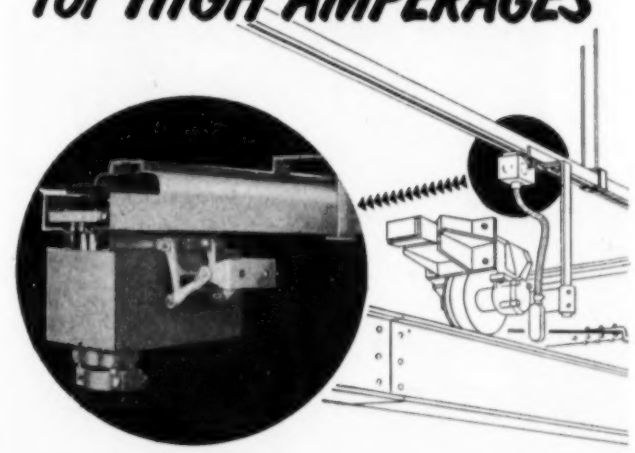
FOR EXAMPLE

With a *specially engineered* power scoop, this E-P truck transports bulk chemicals 7½ times *faster* than by previous method.

THE ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave. Cleveland 3, Ohio

If you write maker identify as IEN - 739

NOW—a completely standardized mobile electrification system *for HIGH AMPERAGES*



HEAVY DUTY FEEDRAIL®

FOR 250, 375 AND 500 AMPERES 250 V., D.C. OR 575 V., A.C., SINGLE OR 3-PHASE

- Now, 250, 375 and 500 ampere FEEDRAIL "HEAVY DUTY" Systems are available in standardized track sections, trolleys and accessories.

"HEAVY DUTY" FEEDRAIL is not an adaptation of a lighter capacity system. Every one of its standardized components is designed and proportioned *expressly* for high amperage and heavy duty service. In addition, it offers the advantages of safety—easy installation—adaptability and mobility so essential to an efficient electrification system.

Existing applications include freight car icing machines—heavy tonnage cranes and hoists—large machine tools, etc.

Write for literature

Sold by leading electrical distributors

52-5A

Never Becomes Obsolete
ELECTRIC FEEDRAIL® **FEEDRAIL CORPORATION**
Subsidiary of Russell & Stoll Company, Inc.
125 BARCLAY STREET · NEW YORK 7, N. Y.

SPECIALLY QUALIFIED REPRESENTATIVES IN PRINCIPAL CITIES

If you write maker identify as IEN-741

- High wear resistance
- Holds nozzle orifice dimensions
- Retains original velocity
- Resists cut-outs
- Saves compressed air
- Restricts pattern—keeps it concentrated on the work

Guaranteed **300 HOURS** when cleaning with sand or most other common abrasives. Usually lasts longer!

Made in standard screw and flange types.

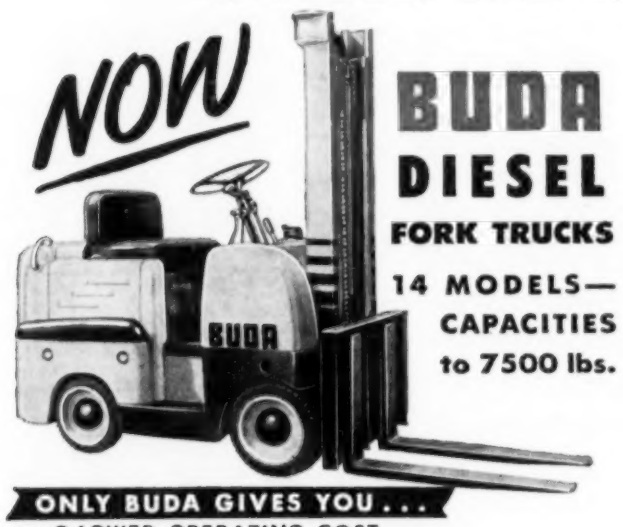
Special types and sizes built to order.

Write for complete details.

*BORIUM is the Stoody trade-name for its pure, extremely wear-resistant tungsten carbide—one of the hardest commercial metals yet developed by man!

STOODY COMPANY • 11930 East Slauson Avenue, Whittier, California

If you write maker identify as IEN-742



ONLY BUDA GIVES YOU . . .

- **LOWER OPERATING COST . . .** 50 to 60% Fuel Savings with Diesel Power
- **LESS MAINTENANCE**
- **GREATER SAFETY**—Non-toxic, non-contaminating exhaust
- **LONGER OPERATION**—Between Overhauls

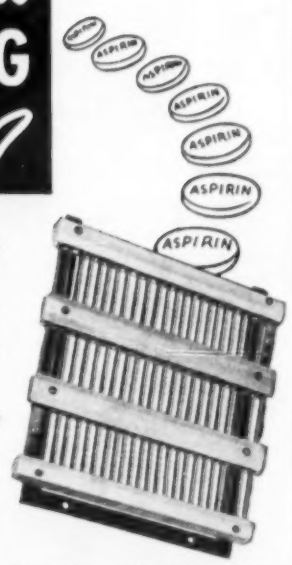
Ask your nearby Buda Material Handling Distributor about the new Buda "FT" Series Diesel or gasoline powered Fork Trucks today. Write for new, colorful Bulletin 1570. It's FREE—there's no obligation. The Buda Company, Harvey, Illinois.

BUDA The Line with all 3 for Diversified Handling — PLATFORM TRUCKS, TOWING TRACTORS, FORK LIFT TRUCKS

Manufacturers of Material Handling Equipment, Lifting Jacks, Maintenance of Way Products, Earth Drills and Diesel and Gasoline Engines BH-37A

If you write maker identify as IEN-743

Have **YOU** *a* **HEATING** *Headache?*



The Production Manager for a prominent manufacturer of Aspirin Tablets got rid of *his* by equipping the company's Conveyor Type Drying Machinery with TRENT Patented

"Folded-and-Formed" Heating Elements

Long Life Guarantee!

This installation is typical of the wide variety of applications for these efficient, economical electric heating elements . . . in Custombuilt or Standard Racks.

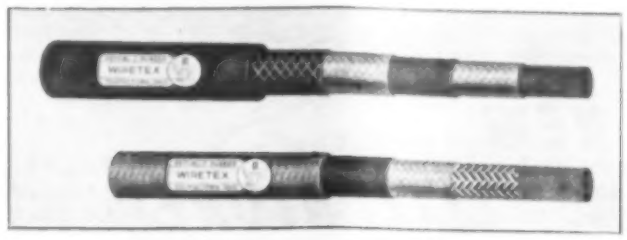
Write for complete information on "Folded-and-Formed" Heating Elements, or send details of your application.

TRENT INC.
Electrically Heated Industrial Equipment
247 LEVERINGTON AVE. PHILA. 27, PA.

If you write maker identify as IEN-744

HOSE . . Oil resistant rubber, fabric and wire reinforced, to 2 in.

Source: REPUBLIC RUBBER DIVISION
1950 Albert St., Youngstown 1, Ohio



Designed to handle fluids and gases

Wiretex trade names a new hose that is built up and mandrel cured in lengths to 60 feet. Construction employs a Reprene synthetic rubber tube with a textile reinforcing carcass in multiple rubber impregnated plies, or alternating plies of braided fabric and braided wire, or multiple braids of standard or heavy wire alone. The carcass is enclosed in an abrasion resistant rubber cover or one of braided textile.

Working pressure is to 5,500 lb. with temperature range between minus 40 and plus 200 deg. F. The hose will handle hydraulic pressure. It also is suited for air, ammonia, steam. It retains its strength under constant vibration and flexing.

If you write maker identify as IEN-745

PAINTING . . Powdered material for masonry surfaces, contains silicone

Source: PRIMA PRODUCTS INC.
10 E. 40th St., 30th Floor, New York 16, N. Y.

Available in various colors

Silitex trade names a new cement paint that is supplied in the form of a powder to be mixed with water and applied by brushing on above or below grade surfaces of masonry including block, stucco, concrete, but not gypsum plaster. It bonds with the surface and penetrates to seal against water seepage as well as to decorate.

If you write maker identify as IEN-746

SANDING . . Portable pneumatic tool oscillates a cushioned sanding pad

Source: NATIONAL AIR SANDER INC.
819-23 Kishwaukee St., Rockford, Ill.

New unit in line

Orbital or straight line action, through a $\frac{3}{16}$-in. stroke, can be specified for this new Model-600 single pad air sander. Weight is 5 pounds. Operation is at 3,200 rpm. The unit takes an abrasive sheet measuring 3⅔ by 9 inches. A built-in water spray is provided for wet sanding. The tool can be equipped with either a rubber or a felt backing pad. The paper holders permit quick change.

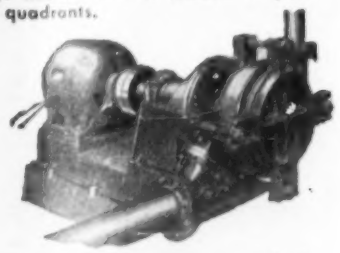
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-747

Only the New **TYPE "R" MORRIS SLURRY PUMP** *has these 4 features*

1. **Gland is under suction pressure only. This feature practically eliminates packing troubles.**
2. **For dismantling, you need remove only four bolts. No internal studs or bolts . . . no troublesome fits or joints.**
3. **You can remove impeller and liner without disturbing piping.**
4. **Shell interchangeable for right or left-hand rotation. Suction and discharge nozzles can be rotated to positions in any of four quadrants.**

The New Type "R" Morris Slurry Pump handles caustic or acid mixtures containing abrasives or solids; also ore concentrates, tailings, slag, residue from filters and classifiers.



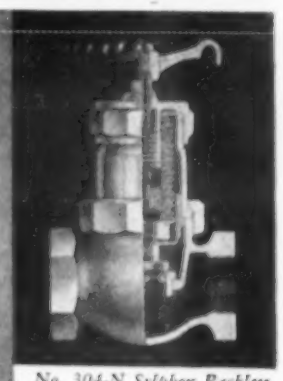
Write for specifications and operation data on pumps best suited to your particular needs. No charge or obligation.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Sales Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

If you write maker identify as IEN-748

ARE LITTLE LEAKS CAUSING YOU BIG LOSSES?



No. 304-N Sylphon Packless Valve comes in sizes from ½" to 2" for pressures up to 150 lbs. Also available in larger sizes is No. 1304 with flanged connections for liquid pressures up to 80 lbs. No. 304-NV is ideal for vacuum service.

***Stop them with* SYLPHON PACKLESS VALVES**

● Costly leaks of valuable liquids or gases can be *stopped for good* . . . with Fulton Sylphon Packless Valves. They prevent waste—provide vacuum protection—help your equipment operate more efficiently and economically.

A dual-ply, seamless Sylphon metal bellows replaces customary packing . . . provides a positive seal. Many sizes and types, with body made of brass, bronze, cast iron, cast steel, stainless steel or monel.

Widely used in the processing industries—chemical plants, oil refineries; also in power plants, aboard ships. Ideal for standard equipment. Write for Bulletin **AN-813.**

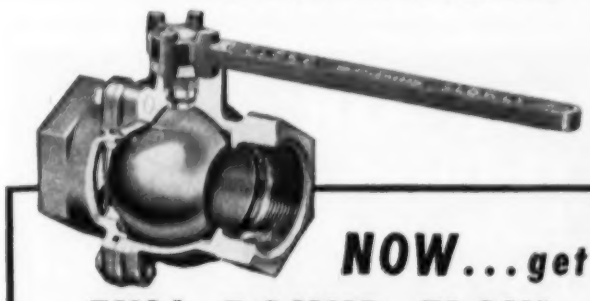
FULTON SYLPHON DIVISION

ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.

Temperature Controls • Bellows Devices • Bellows Assemblies

Canadian Representatives, Darling Brothers, Montreal

If you write maker identify as IEN-749



NOW . . . get

FULL ROUND FLOW

in a quarter turn

Designed to step up valve performance in every detail of operation, Rockwood Ball Valves are making good in a wide range of services. Chief reason is the chrome-plated floating bronze ball that assures a full *round* flow . . . enables quick opening and closing . . . resists wear longer . . . stays leakproof.

Ideal for handling water, air, carbon dioxide, nitrogen and other gases, paraffin and asphalt base petroleums, alcohol, paper fluids and many other types of fluids and gases. Approved by Underwriters' Laboratories, Inc. For further details, send for free Bulletin V-4. Rockwood Sprinkler Company, 40 Harlow Street, Worcester 5, Mass. Distributors in all principal cities.

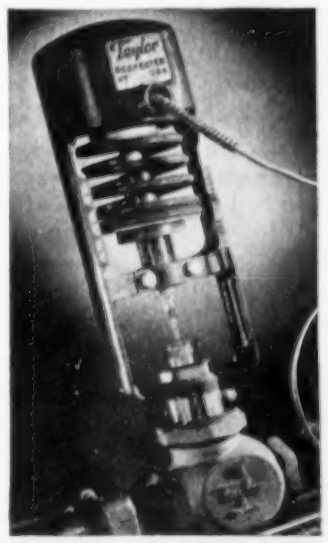
ROCKWOOD

ROCKWOOD FULL-FLOW BALL VALVES
THE FLOW IS AS ROUND AS THE PIPE ITSELF

If you write maker identify as IEN-750

INSTALL IT! FORGET IT!

THAT'S all you have to do with this Taylor Self-Acting Temperature Controller! Simple, dependable, needs practically no maintenance. Ideal where your process involves no extreme load changes. Where compressed air or electricity aren't available.



For jobs like: wax coating machines, plating and rinsing tanks, bottle and can washers, mixing and cooling kettles, hot water tanks, diesel water jackets, feed water systems, crude oil treaters, condenser cooler water in stills, oil field superheaters and others.

No auxiliary air supply required. Double seated valves available up to 2"; single seated composition disc types up to 1". Numerous standard temperature ranges within 10° to 340°F., and semi-standard temperature ranges within 165° and 610°F. Choice of bulb materials and type of connection.

Ask your Taylor Field Engineer or write for **Catalog 36-R.** Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada.

Instruments for indicating, recording and controlling temperature, pressure, flow, liquid level, speed, density, load and humidity.

TAYLOR INSTRUMENTS MEAN ACCURACY FIRST

If you write maker identify as IEN - 751

PLUMBERS & HEATING MEN—DON'T MISS THIS: Mutual's field proven Propane Furnace melts 60 pounds of lead in 12 minutes. Mutual Propane Furnaces and Torches are hotter, faster, safer. You get the job done better and quicker with fewer man hours. No pumping, priming or waiting. Won't blow out. No smoke. Light weight. Ideal for heavy duty preheating and close melting. Blow torch and soldering iron can be attached to Propane tank hose.

Mutual High Speed Torches available in broad flame or pointed flame. Reduce excessive labor costs. Use Mutual Torches and Furnaces for the most efficient, cleanest, portable fuel known.

Send for free Mutual catalog and price list.

*Liquid Petroleum Gas

If you write maker identify as IEN - 752

FAR-AIR* reduces air filtering costs 1/3!

Here's why...

You get more efficient air filtration . . . save valuable space . . . cut maintenance costs.

Here's how...

Far-Air's *exclusive* herringbone-crimp media design allows progressive loading through the depth of the filter.

Two Far-Air filters easily do the work of three ordinary types. You also save on first cost by building smaller plenum chambers and purchasing fewer filters and holding frames.

Far-Air construction permits easy cleaning by flushing with a hose. Filters can be washed and reoiled while in place. Installation and removal is quick and easy.

Other FAR-AIR Products include:
Self-washing Filters—Kitchen Grease Eliminators—Engine and Compressor Filters—Rotary (Evaporative) Coolers—Air Baffle Equipment—Filter Servicing Equipment.

Trade Mark Reg.

FAR-AIR FILTERS "Better by Farr"

Fill out coupon, mail today. We'll send you full information on the money-saving features FAR-AIR filters can give you!

FARR COMPANY
Manufacturing Engineers
CHICAGO · LOS ANGELES · NEW YORK
Mf'd under license by Control Equipment Co., Ltd., Montreal, Canada

FARR COMPANY, P. O. Box 10187, Airport Station
Los Angeles 45, California
Please send me complete information on FAR-AIR filters.
I would ☐ would not ☐ like a Farr Field Engineer to assist me with my filter problem.
Name _____ Title _____
Company _____
Address _____

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Each includes identification, size of the material, information it contains so you can judge its value to you.

Identify as IEN - 01

ADHESIVES . . Plywood to metal, vinyl plastic to wood, rubber to metal are some of the combinations possible for the 26 adhesives, coatings, sealers covered by 8-page "Adhesives" booklet. Method, color, base, solvent, viscosity, solids, content, weight, uses are given for each. Minnesota Mining & Mfg. Co., 409-13 Piquette Ave., Detroit 2, Mich.

Identify as IEN - 02

AIR CONDITIONING . . Summer cooling and dehumidification of air from 1,600 to 45,000 cfm. is the subject of new 32-page Catalog 1660 on the company's Type-DS surface dehumidifiers. A selection procedure for determining size gives formulae, unit data, psychrometric data, coil performance. Three sample problems are worked out in detail. Westinghouse Electric Corp., Sturtevant Div., 202 Readville St., Dept. T-433, Boston 36, Mass.

Identify as IEN - 03

ALUMINUM . . Alloy selection guide is part of new 12-page "Mill Products" bulletin. It gives you a quick picture on designations, properties, uses of cast and wrought alloys. Standard forms and sizes of sheet, plate, wire, tubing, pipe, extruded and structural shapes are among other information included. One section describes fabricating and finishing. Reynolds Metals Co., 2502 S. 3rd St., Louisville 1, Ky.

Identify as IEN - 04

BENDING . . Hand rolling machine forms closed circle bends to make cylinders from sheet at the turn of a handle. It also makes a bend at any point in a sheet. Little diagrams in 6-page Bulletin D-RI show roll arrangement for each type of setup in two machines, one to 6 in. capacity, the other to 12 in. O'Neil-Irwin Mfg. Co., 547 8th Ave., Lake City, Minn.

Identify as IEN - 05

MAGNESIUM CASTINGS . . How might you use them in your product? See text and examples in 16-page bulletin, "New Horizons," which gives data on new alloys available. Rolle Mfg. Co., Cannon Ave. and Third St., Lansdale, Pa.

Identify as IEN - 06

CLEANING MACHINES . . "Inside Story" of a washing machine for metal parts is shown by a captioned cut-away view of a standard two-stage unit in 8-page "Industrial Washers" booklet. Other pictures show the range of machines built to handle specific metal-washing and phosphate-coating work. Detrex Corp., 14329 Woodrow Wilson, Detroit 32, Mich.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 754

FOR ALL TYPES OF INDUSTRIAL FLOATS

WHEN you order from Chicago Float you're sure of getting high quality, dependable floats, regardless of what your requirements are. You can be sure that every float shipped is backed by more than 35 years' experience in the building of floats for every purpose — high or low pressures and temperatures, corrosive fluids, open tank applications or other specific uses. For everything in industrial floats, look to Chicago Float Works.

A COMPLETE LINE

- STAINLESS STEEL — Diameters from 2" to 10". Spherical shape.
- COPPER — Diameters from 2" to 12". Shapes: Spherical, oval, cylindrical (flat or radius heads and with or without internal reinforcements or wear bands), column type, and disc type.
- MONEL, NICKEL, BRASS — Diameters from 2" to 10". Spherical and cylindrical shapes.
- ALUMINUM — Diameters from 4" to 12". Spherical and cylindrical shapes.
- STEEL — Diameters from 2" to 14". Spherical shapes.

SEND FOR FLOAT CATALOG

CHICAGO FLOAT WORKS
2326 South Western Avenue • Chicago 8, Illinois

If you write maker identify as IEN - 755

32 Pages of Helpful Information on Dust Recovery Systems

If you are now using dust or fly ash recovery equipment in your plant—or are planning installation of such equipment now or later—you will find this new Multiclone booklet full of helpful information. Illustrations and diagrams outline basic principles of dust recovery and how to utilize them for maximum efficiency . . . how to simplify your installations . . . how to conserve valuable plant space . . . how to get high recovery over a wide range of particle sizes, etc. *A copy of this booklet should be in your files for reference and assistance in dust recovery applications. A free copy will gladly be sent you on request. Write today while supplies are adequate.*

WESTERN Precipitation CORPORATION
ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS
Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 1 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

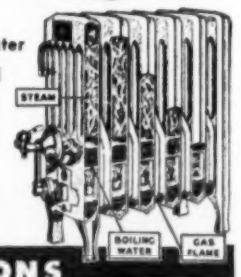
If you write maker identify as IEN - 756

NO NEED TO WORK IN AN OVERCOAT WITH A CLOW GASTEAM RADIATOR IN YOUR OFFICE

Steam Heat...where you want it... when you want it.

Hard to heat offices within a cold, drafty plant, warehouse or plant out-building become warm and comfortable with an individual Clow Gas Steam Radiator. Economical, because they make their own steam heat with gas. No hot water pipes, boiler or furnace room to depend upon. Available in 35 sizes, vented and unvented, to meet every heating need.

SEND FOR COMPLETE INFORMATION, INCLUDING OPERATING PRINCIPLES, INSTALLATION DATA, TYPICAL INSTALLATIONS AND PRICES.



Available for City, Butane or Propane Gas

JAMES B. CLOW & SONS
201-299 N. Talman Ave., Chicago 80, Ill.

If you write maker identify as IEN - 757

SEND FOR FREE SAMPLE Twisted Wire Brush

Note the FINE QUALITY and HIGH PRECISION typical of ALL MILL-ROSE BRUSHES

The sample brush we shall send you on request was made to meet the very close specifications of the original buyer. It was guaranteed exact diameter required plus or minus .001 inch. You will find it interesting, whether you are in engineering, shop or purchasing, as indicating what Mill-Rose can do to meet your needs for twisted wire brushes to perform many operations — cleaning, scaling, reaming, polishing — at lower cost.

Mill-Rose, in addition to brushes made to specifications, stocks a line of 56 standard sizes from 1/8" to 1" diameter in 1/16" increments and from 1" to 3" long — single and double spiral.

High quality work — faster production — lower costs — call for high precision brushes. The sample brush will tell you how well we qualify to manufacture to your specific needs. Write today.

Write for Twisted Wire Brush Catalog
56 STANDARD SIZES in Stock

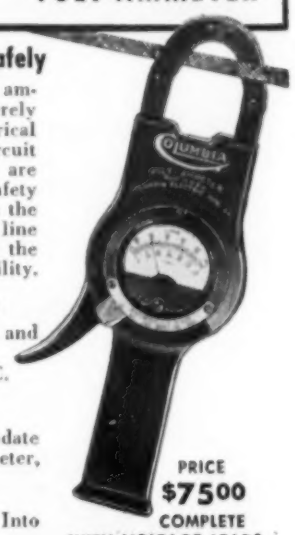
HIGH PRECISION INDUSTRIAL BRUSHES TWISTED OR WIRE
The MILL-ROSE Company 7803 EAST 59th STREET CLEVELAND 3, OHIO

If you write maker identify as IEN-758

CHECK VOLTS and AMPS WITH THE
COLUMBIA
New
A.C. CLAMP TYPE
VOLT-AMMETER

• Quickly • Accurately • Safely

Columbia Type AC-1 provides ampere readings with a snap by merely clamping jaws around the electrical conductor, without breaking circuit or insulation. Voltage readings are taken quickly and easily with safety plug-in leads. This instrument is the latest addition to the Columbia line of clamp type instruments of the highest quality and dependability.



TYPE AC-1 FEATURES

- Measures Up to 600 Amperes and 600 Volts.
- Amperes: 0/12/60/120/600 A.C.
- Volts: 0/150/600 A.C.
- Convenient Range Switch.
- Insulated Jaws Will Accommodate Conductors up to 1-1/2" diameter, Bus Bars up to 2" x 1/2".
- Accuracy: 3% full scale.
- Light Weight — Fits Easily Into Pocket.
- High Quality At Low Cost.

PRICE $75.00 COMPLETE WITH VOLTAGE LEADS AND CARRYING CASE

Inquiries Invited From Distributors

Write for descriptive Bulletin AC-19

COLUMBIA ELECTRIC MFG. CO. 4519 Hamilton Ave. Cleveland 14, Ohio

If you write maker identify as IEN-759

Well Stacked!

Let our rack specialists lay out your new installation for maximum efficiency or study your present operation for possible improvements.

PROPER STACKING OF GOODS SAVES SPACE AND LABOR

E.M.I. engineers, fabricates and installs complete rack systems. Our designs offer the greatest in strength and safety, incorporating our square welded steel tubing and simplified assembly methods.

- PALLET RACKS
- PORTABLE STOCK RACKS
- COIL RACKS
- SPECIAL RACKS FOR ALL APPLICATIONS

Write for our catalog

EQUIPMENT MFG. INC.

21564 Hoover Road • Detroit 5, Michigan

NEW LITERATURE—Continued

Identify as IEN-07

COMMUNICATING . . How you can use two-way radio as a direct rapid means of communication is described in 8-page Bulletin ECR-47. Examples are to direct movements of industrial trucks, to call emergency service equipment, to tie in units of plant protection department. General Electric Co., 1949 Electronics Park, Syracuse 1, N. Y.

Identify as IEN-08

COMMUNICATING . . No batteries or switchboard are needed when you talk over the Wheeler sound-powered telephone described in 6-page Bulletin SA-25. Clear undistorted speech is a feature at distances to 20 miles. Wheeler Insulated Wire Co., 148-52 E. Aurora St., Waterbury 91, Conn.

Identify as IEN-09

POSITION CONTROL . . Photoelectric scanner maintains traverse position of a web to keep it rolling straight and true into a processing machine. Schematic diagrams in new 8-page Bulletin 18-530 show how the equipment works. A table lists characteristics of three types. Westinghouse Electric Corp., 511 Wood St., Dept. IEN, Room 1110, Pittsburgh 30, Pa.

Identify as IEN-010

OVERHEAD CONVEYING . . Track, cranes, hand and power trolleys ride through the eight pages of Catalog 108 to give you an idea of what can be done in the line of overhead handling. Forker Corp., 2033 Random Road, Cleveland 6, Ohio.

Identify as IEN-011

ROLLING DOORS . . Interlocking steel slats roll up overhead like a window shade to leave the doorway clear. Grilles and shutters work the same way. All are presented in 16-page Catalog G-53 along with hand and power operators. R. C. Mahon Co., P. O. Box 4666-A, Detroit 34, Mich.

Identify as IEN-012

DRILL HEAD . . Air-powered hydraulic unit which you can use in multiple for drilling, reaming, spot-facing, hollow milling and other operations. 20-page Bulletin AD-723 shows how others have assembled these heads into automatic machines, includes schematic diagrams to show operation of the air-hydraulic circuits, includes data on mounting accessories. Rockwell Mfg. Co., 624-G N. Lexington, Pittsburgh 21, Pa.

Identify as IEN-013

ELECTRIC DUCT . . Surface-mounting metal raceways provide electric outlets on floors, baseboard, walls, ceilings to meet your immediate or future needs. New Wiring Guide No. 19 contains 120 pages of catalog and selection data with ideas on installation and possible uses of unwired and wired types. Wiremold Co., 2 Wiremold Road, Hartford 10, Conn.

Identify as IEN-014

DUST COLLECTING . . How effective an electrostatic precipitator is in removing air-borne particles can be seen from a chart in new 12-page Catalog E-60. How the company's electronic power unit removes these particles is described with tables of standard units and capacities to 80,000 cfm. Trion Inc., 1002 Island Ave., McKees Rocks, Pa.

Identify as IEN-015

ELECTRONIC TUBES . . Up-to-date list of preferred tube types for new equipment design supersedes any previous list you may have. Ask for 4-page Folder PTL-501C. Radio Corp. of America, 413-17 S. 5th St., Harrison, N. J.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-761

USE JOMAC®

INDUSTRIAL WORK GLOVES

For better hand protection. Jomacs will increase production by helping to reduce injuries in your plant. Made of Jomac Cloth—the famous thick, twisted loop pile fabric.

Write for our new illustrated catalog

WASHABLE • FLEXIBLE • INTERCHANGEABLE • RESIST CUTTING, PROTECT AGAINST HEAT AND COLD

C. WALKER JONES CO., PHILADELPHIA 38, PA.

If you write maker identify as IEN-762

MULTIPRESS®

Feeds and Forms Hard-to-Handle Plastic With Automatic Accuracy at U. S. Gasket Co.

Toughness and high heat-resistance make Du Pont's *Teflon* an ideal plastic for many needs. But feeding the raw material to moulding dies was a problem — the granules tend to stick together in a non-fluid mass.

Equipped with a unique self-agitating feed, Multipress solved the problem. At cost-cutting speeds, it compacts parts with automatically uniform results — a necessity as the parts must pass micrometer inspection. A bottom ram is also used so that equal pressures are applied to *top and bottom* of the parts.

Featuring quick tool-changing and easy adjustment of stroke, speed and pressure, Multipress can be switched from job to job with *minimum production loss.*

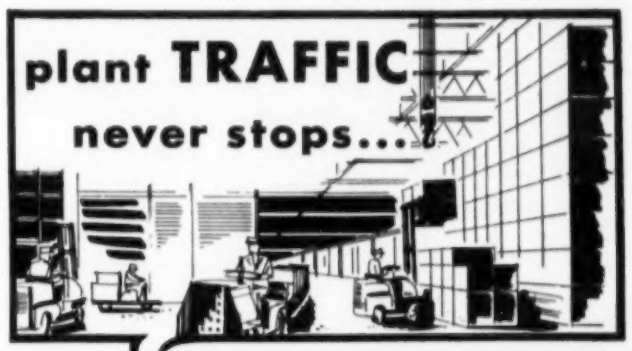
Multipress, with its rapid, *low-impact pressure* and control, is cutting costs in almost every field. Eight frame sizes; one to 50-ton capacities.

Write for details.

DENISON HydrOILics

The DENISON Engineering Co. 1150 Dublin Road, Columbus 16, Ohio

If you write maker identify as IEN-763



When You Repair Your Floors With

PERMAMIX—The All-Temperature Patch!

Permamix gives you a FAST permanent repair on concrete, brick, tile or asphalt floor surfaces. It's long wearing, easy to apply, sets instantly — WILL NOT FREEZE — can be stored indefinitely and used in any temperature. It lowers maintenance costs amazingly.

Here's all you do: Clean area to be patched, apply primer supplied in drum, fill with PERMAMIX just as it comes from the package, allowing sufficient material for slight crown, then tamp solidly and resume traffic AT ONCE.

PERMAMIX feather edges, there's no mixing or waiting — anyone can do it, no special equipment needed. Comes in handy, durable 50 lb. net weight fibre drums and it will not "set" in the package — covered or open. Start patching your floors, with no production delays, the Permamix way today. Send for full details NOW!

PERMAMIX CORPORATION

230 N. LaSalle Street • Chicago 1, Illinois

If you write maker identify as IEN-764

Aeroquip

YOUR BEST BUY IN FLEXIBLE HOSE LINES

FITTINGS are detachable and reusable. For on-the-spot hose line replacements cut bulk hose to required length and attach fittings. It saves time and money, and reduces inventory.

HOSE is tough, durable and fire resistant. Ideal for use with hydraulic fluids, lubricants, water, gasoline, Diesel fuel, air and many other fluids.

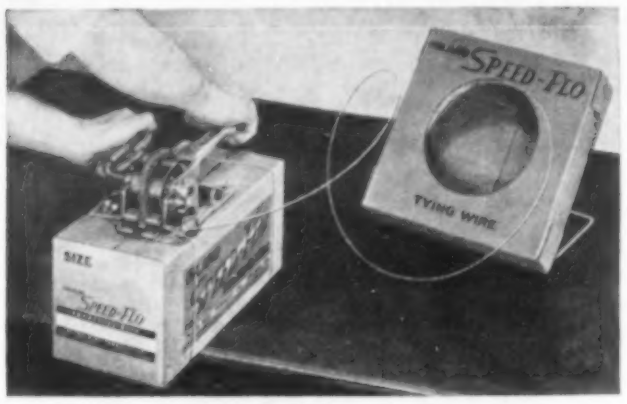
AEROQUIP CORPORATION

JACKSON, MICHIGAN

FLEXIBLE HOSE LINES • DETACHABLE, REUSABLE FITTINGS • SELF-SEALING COUPLINGS • BREAKAWAY COUPLINGS • HYDRAULISCOPE

Aeroquip Products are fully protected by Patents in U.S.A. and Abroad

If you write maker identify as IEN - 765



Tie 'em right! Tie 'em tight!

Inland Model "D" Wire Tying Machine

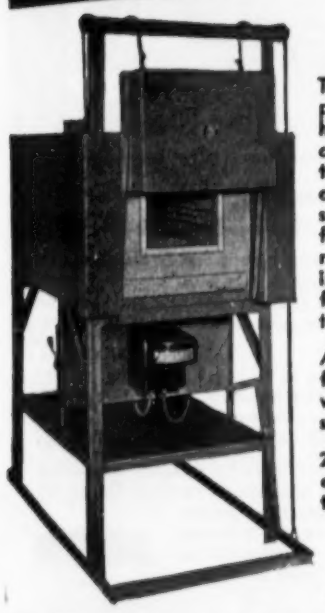
Ask for complete information on this new efficient package tying combination. Just refer to Model "D" and Wire.

There's no package tying combination more efficient and handy than the Model "D" self-tensioning tying machine and the new 25 lb. packaged, smooth-feeding Inland tying wire. Tying of cartons, light wooden cases, parcel post packages and other medium sized bundles is put on a production line basis. Inland round tying wire is available galvanized—and in 17, 17½ and 18 gauges. Inland wire tying conforms to all U. S. postal regulations.

INLAND WIRE PRODUCTS COMPANY
3963 South Lowe Avenue Chicago 9, Illinois

If you write maker identify as IEN - 766

"MULTI-INSULATION" is the secret of...



HUPPERT Floor Model FURNACE

This sturdy, production-type Huppert Furnace not only attains highest-level efficiency, but cuts operating costs to a minimum through unique Huppert method of multi-insulation surrounding all sides of the work chamber. This furnace provides a versatile heat range—continuous up to 1850°F., intermittent to 1850°F. Also built for 2300°F. for special applications.

Automatic Temperature Control featured. Also tight-seating, wedge-type door and convenient shelf.

220 V. AC, single or 3-phase operation (110 V. or 440 V. models to order).

This model built in 20 different sizes

Model No. 16 illustrated, 12" x 8" x 18" — $925.00 complete.

K. H. HUPPERT COMPANY
6856 COTTAGE GROVE AVENUE CHICAGO 37, ILLINOIS
• *Manufacturers of Electric Furnaces and Ovens* •

If you write maker identify as IEN - 767

REDUCE COSTS ON "SMALL-WORK" GRINDING & FINISHING JOBS with

Foredom FLEXIBLE SHAFT MACHINES

YOU GET ALL these superior features

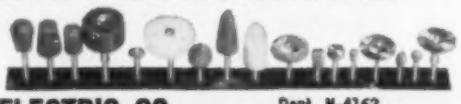
- Feather-weight, finger-tip-controlled handpiece (pencil size or larger) which eliminates operator fatigue.
- Choice of 5 handpiece types (all instantly interchangeable). You fit the handpiece to the job at hand.
- Longer motor life because motor is not dwarfed to fit the hand.
- High speed which does not drop precipitately under load.
- Silencer-equipped flexible shaft for vibration-free performance.
- Extra good flexing qualities in the flexing shaft assembly for effortless maneuverability.

BENCH OR HANG UP MODELS FOR HEAVY OR LIGHT DUTY

Also flexible shaft tools attachable to your own drill press or motor

Use Foredoms to GRIND, POLISH, DRILL, ROUT, CARVE, MILL, SAW, SLOT, CLEAN, SAND, ETCH, ENGRAVE, etc., etc.

Write for Catalog N-4162



FOREDOM ELECTRIC CO. Dept. N-4162 27 PARK PLACE, N. Y. 7, N. Y.

NEW LITERATURE—*Continued*

Identify as IEN - 016

DIESEL ENGINE . . Small light four-cylinder diesel with 200 to 380 hp. rating at 900 and 1,000 rpm. continuous service; cut-away views in 12-page Form 10027 show design features that contribute to engine's 30 lb. per hp. ratio. Ingersoll-Rand Co., 11 Broadway, Dept. NR, New York 4, N. Y.

Identify as IEN - 017

FABRICATING . . All you need is a wrench to assemble Unistrut metal framing and accessories into pipe support racks and hangers, electric cable supports, storage racks, shelving, fluorescent fixture wireway. 84-page pocket Catalog 800 shows you how, includes planning information. Unistrut Products Co., 1011-15 W. Washington Blvd., Chicago 7, Ill.

Identify as IEN - 018

AXIAL FANS . . Airstream patterns show advantages of axial-flow fans in 16-page Bulletin J-611. They are accompanied by a cut-away view and specifications on 136 models. Joy Mfg. Co., 452 Henry W. Oliver Bldg., Pittsburgh 22, Pa.

Identify as IEN - 019

INSERT FASTENERS . . Threaded inserts push into holes in plastics, soft metals, other materials to hold screws by a locking action. "Tapped Hole" catalog, 4 pages, describes these and blind fasteners for thin sheet. Brush Nail Expansion Bolt Co., 287-91 Greenwich Ave., Greenwich, Conn.

Identify as IEN - 020

AIR FILTER . . Rust particles, pipe scale and dirt cannot enter pneumatic equipment protected by the Master-Filter. Ten-sheet looseleaf catalog presents information on these filters, alone or in combination with an air-line lubricator and a regulating valve if desired. Master Pneumatic Supply Co., 20428-32 Sherwood Ave., Detroit 34, Mich.

Identify as IEN - 021

LIQUID FILTERS . . For products from ammonia to whiskey are reviewed in 16-page Catalog 52. A feature is the range of designs and construction modifications possible. Associated equipment, vacuum bottle fillers and pumps, are included. Ertel Eng. Corp., 11 Clinton Ave., Kingston 8, N. Y.

Identify as IEN - 022

OIL FILTERS . . Suggestions on how to use pressure and gravity filters on machine tools to keep coolants and cutting oils clean. Bulletin 14-A, 4 pages, shows recommended types and includes schematic connection diagrams. Wm. W. Nugent & Co., 414 N. Hermitage Ave., Chicago 22, Ill.

Identify as IEN - 023

FLOOR MATERIALS . . Patching holes, resurfacing, plugging leaks in basement walls, repairing a leaky roof, protecting structural steel from rust, are some of the instructions given in revised 48-page booklet, "Over the Rough Spots." Stonhard Co., 1304-8 Spring Garden St., Philadelphia 23, Pa.

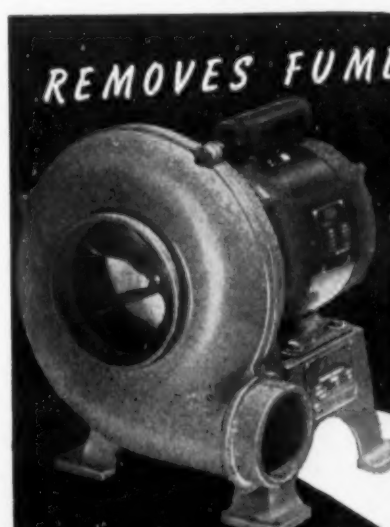
Identify as IEN - 024

FORGING PRESS . . How frame and guides are designed, how its offset eccentric works, operating features of its quick-acting air clutch are described in 8-page Bulletin 217 for mechanical forging press, 500 to 6,000 ton in 10 models. Clearing Machine Corp., 6491 W. 65th St., Chicago 38, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 768

REMOVES FUMES—DUST FASTER!



High Quality PRESSURE BLOWER

only $49.50

REG. PRICE $70.00

For the fast, efficient elimination of welding fumes, sawdust, or other air impurities, you can depend on this precision-made, all-aluminum high-pressure blower. Made with 5½" inlet and 3½" outlet. Enclosed ¼ H.P. Westinghouse single phase motor, 115 V., A. C., provides 3450 R.P.M. and up to 450 C.F.M. Immediate delivery! Ask for #BL50W.

STANDARD ELECTRIC MFG. CO., INC.
WEST BERLIN 12, N. J.

If you write maker identify as IEN - 769

SAFER LONGER...

Surety's Sureseal Synthetic has 10 times higher abrasion resistance, 4 times higher snag resistance, much higher chemical resistance than either rubber or standard synthetics.

..SO THEY COST LESS

SURETY SURESEAL SYNTHETIC RUBBER GLOVES

THE SURETY RUBBER CO. Dept. 1 CARROLLTON, OHIO

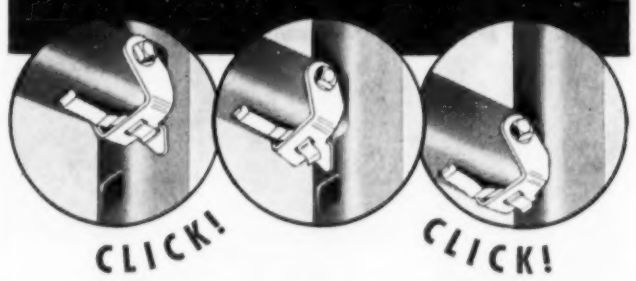
IN CANADA: Safety Supply Co., Toronto, Ont.

If you write maker identify as IEN - 770

The ONE and ONLY adjust-o-matic RACK

AMERICAN RATCHET RACK

adjustable without bolting



.. and the rack-shelf is in position

- No waste space . . . more storage space per sq. ft.
- Built for any size pallet skid or box.
- Let us tell you more . . . send for literature.

Installation at Westinghouse Electric Corp., Trafford, Pa.

AMERICAN TUBULAR MATERIALS HANDLING EQUIPMENT
PRODUCED BY BORROUGHS MFG. COMPANY

AMERICAN SALES ENGINEERS
5959 Linsdale • Detroit 4, Michigan

If you write maker identify as IEN - 772

Forget Metal Shortages!

SWITCH TO **PLASTIC DIALS**

precision-fabricated by SILLCOCKS-MILLER

Don't let metal shortages slow up production. Sillcocks-Miller engineers have the practical answer for you in dials of all types fabricated from plastic.

No matter what your dial requirements may be, it will pay you to consult Sillcocks-Miller. Their experience, facilities and precision techniques will help you solve present metal shortage problems.

Write for samples and quotations.

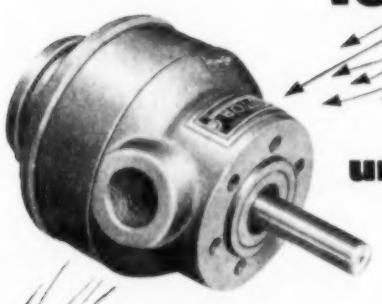
The SILLCOCKS-MILLER Company

Pioneers in Plastic Fabrication since 1910

27 W. Parker Ave., Maplewood N. J.

If you write maker identify as IEN - 773

the "label" tells you it's unique



See the Gerotor name-plate on a hydraulic pump and you know what's inside . . . the renowned Gerotor mechanism. It minimizes friction, wear and slippage . . . assures higher efficiency at lower operating cost. Eleven sizes, some for pressures up to 1200 p.s.i. continuous, 1500 p.s.i. intermittent. Specify Gerotor!

Gerotor May Corp., Box 86, Baltimore 3, Md.

GEROTOR HYDRAULIC PUMPS

If you write maker identify as IEN - 774

Proved In Industry

Prep-n-Cote

An Established Iron Phosphate Coating and Cleaning Product

Ordinary Solvent cleaning, (magnified 5 times) completely failed at 72 hours under salt spray fog. A.S.T.M. Spec. B-117-T-44.

Prep-n-Cote panel, (magnified 5 times) after 704 hours exposure to salt spray fog. A.S.T.M. Spec. B-117-T-44.

Prep-n-Cote can be used in Mild Steel Industrial Spray Washer Equipment

- From 2 to 6 Stages
- In Steam Gun Operation
- In Dip Tanks
- Also Acts as an Excellent Metal Cleaner
- Provides Superior Paint Bond and Corrosion resistant Properties to Metal Surfaces.

Write for Bulletin 52-116

NEILSON CHEMICAL CO.

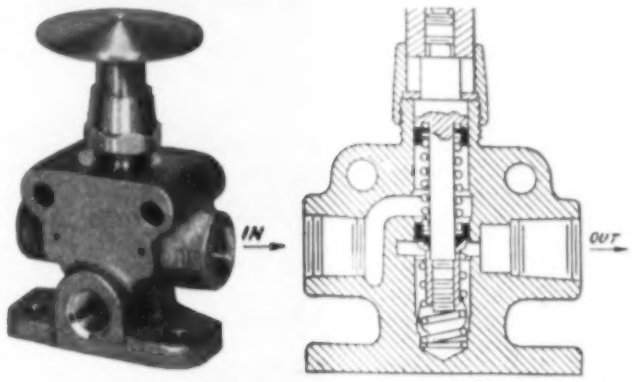
MANUFACTURERS OF METALPREP

3682 Tecumseh Rd. Windsor, Ont. | 6584 Benson St., Detroit 7, Mich. | 3411 Union Pacific Ave. Los Angeles 23, Calif.

If you write maker identify as IEN - 775

VALVE . . Three way pneumatic, hand plunger operated for pilot duty

Source: RIVETT LATHE & GRINDER INC.
20-24 Riverview Road, Brighton 35, Mass.



Five models are shown in Catalog 303

Series 3000 is a new line of valves including six types of operating mechanism of which the palm button unit is shown in the illustration. Included are cams for both side and foot mounting and foot and solenoid types. Depressing the plunger opens the passage for flow to the "out" port on the right. Releasing the plunger permits a spring to return the valve to its original position, blocking the air supply and bleeding the "out" port through a connection to the side just above the base. The incoming pressure applies in closed position against two gaskets that oppose each other on equal area pistons so this pressure does not tend to open the port.

If you write maker identify as IEN - 776

TRUCK . . Power lift fork design to operate in restricted locations

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.

Rides into freight cars and vehicle trucks

The operator stands on a cushioned platform at the rear of this new Stoway truck and holds down a "dead man" brake release pedal with one foot. He controls forward and reverse travel movements by operating one of three levers. The other two actuate load lifting and tilting. Drive and pump motors are enclosed in protected location. The drive motor is mounted on the axle. There are four speeds in forward and reverse.

The truck rates 1 ton at 24 in., 1¼ ton at 15 inches. It turns in a 60-deg. radius. Its 360-deg. steering permits it to operate within its own length. Travel speed is maximum at 6 mph. with a capacity load. The wheel mounting maintains traction over uneven surfaces. Underclearance is 4½ inches. Standard uprights provide for 94 in. maximum fork height. This dimension can be specified in a range between 72 and 132 inches. Tilt is 4 deg. forward, 14 deg. to the rear.

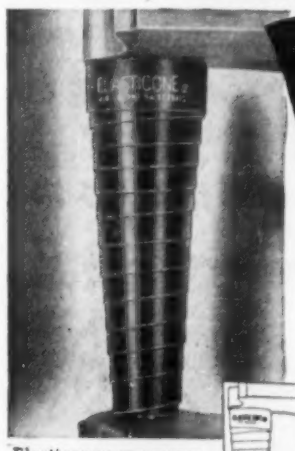
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 777

IT'S SAFETY FIRST!

For Man, Machine and Production

with ELASTICONE **GUIDE PIN COVERS**



Protect Pins and Bushings from nicks and scratches . . . prevent injuries to Die Setters and Operators with Elasticone Guide Pin Covers.

Elasticones are manufactured in stock sizes. Specify O.D. of bushing and full open height of set when ordering. Write for full information and literature.

Just Snap Into Place

No Tools Required

No Installation Costs

CENTRAL

2200 EAST HUNTINGDON ST. PHILA. 25, PA.

CENTRAL SAFETY EQUIPMENT COMPANY

If you write maker identify as IEN - 778

ENGRAVING • PROFILING

for heavy production

Engravograph TM®

Write for literature describing:
1. Heavy Duty model (as illus.)—Catalog H23
2. Portable models—Catalog 1M23

NEW HERMES, Inc.
13-19 University Pl. N. Y. 3, N. Y.

If you write maker identify as IEN - 779

small size

Yarway Impulse Steam Trap is hardly larger than a pipe union. Easily installed *anywhere.* ½" trap weighs 1¼ lbs.; 2" trap only 8½ lbs. Over 650,000 Yarway traps have been *proved on the job.* Sold by over 200 distributors. For name of nearest one, or free bulletin, write . . .

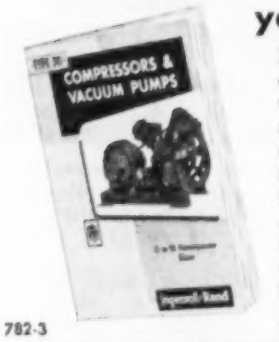
YARNALL-WARING CO., 122 Mermaid Ave., Phila. 18, Pa.

YARWAY IMPULSE STEAM TRAP

If you write maker identify as IEN - 780

DISCOVER

how AIR POWER can speed your production jobs



Find out how Air Power delivered by Ingersoll-Rand Type 30 Compressors, can save time, money and man-hours in your operations. Here are facts and figures every man responsible for production should have. Also, the reasons why Type 30 Compressors give you a *greater* volume of compressed air per hp input.

782-3

CLIP AND MAIL, NOW

INGERSOLL-RAND CO., 11 Broadway, New York 4, N. Y.

Please send me, at no obligation, Booklet 1502-D on the complete line of I-R Compressors.

NAME _____ TITLE _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE _____
(Please Print)

If you write maker identify as IEN - 781

If you write maker identify as IEN - 782

JOY WG-9 "Industrial-Air" COMPRESSOR

Saves space—gives you top efficiency—built for heavy duty

- ★ Full force-feed lubrication of all working parts
- ★ Replaceable cylinder liners and crosshead guides
- ★ Small floor area and simple foundation requirements
- ★ Anti-friction main bearings

15 Sizes—172 to 881 CFM
20 to 150 psi
FREE BULLETIN

For complete details, write for new Bulletin A-43, or...

Consult a Joy Engineer

WAD 13080

JOY MANUFACTURING CO.
General Offices: Henry W. Oliver Building
Pittsburgh 22, Pa.
IN CANADA: JOY MANUFACTURING CO. (CANADA) LIMITED
GALT, ONTARIO

If you write maker identify as IEN - 783

Automatically
SOUNDS SIGNALS,
OPERATES
EQUIPMENT
ON ACCURATE
SCHEDULES

Montgomery PROGRAM CLOCKS & INDUSTRIAL TIMERS

Program clocks for automatic control of signal systems, governing work periods, permitting manual operation for special programs or emergency alarms without affecting accuracy of pe-set schedule.

Industrial timers start and stop equipment automatically to a pre-set schedule. Wide application for shop and laboratory operations. Special timing equipment engineered to your requirements.

Request free specification and data sheets

MONTGOMERY MANUFACTURING CO., Owensville 8, Ind.
Please send free Industrial Timer data sheets
Name .....
Position ..... Company .....
Address ..... City ..... State .....

NEW LITERATURE—Continued

Identify as IEN - 025

SURFACE ROUGHNESS . . Gaged so millionths of an inch look like mountain peaks on the Profilometer scale is subject of 24-page Catalog C-52. A tracing head is run over the work, an electronic amplifier builds up the minute irregularities to indicate on a meter or trace a record on a chart. Micrometrical Mfg. Co., 343-47 S. Main St., Ann Arbor, Mich.

Identify as IEN - 026

GAS GENERATOR . . Making oxygen by the ton with the Linde-Fraenkl air-liquefaction and separation process is described by text and flow sheet at beginning of new 24-page Catalog 2402. Charts and description follow on cost of operation and cost of oxygen usage. Industrial use of oxygen and nitrogen, physical properties, and temperature-entropy diagrams for air, oxygen and nitrogen are included. Blaw-Knox Construction Co., Box 778-A, Pittsburgh 30, Pa.

Identify as IEN - 027

GRINDING WHEELS . . Photomicrographs in new 24-page Booklet G-618 show how an individual grit in a grinding wheel acts to cut a metal chip. Using this concept, the company developed a new line of grinding wheels. Pictures in the booklet show how they are made. Cincinnati Milling Products, Marburg & Kline, Cincinnati 9, Ohio.

Identify as IEN - 028

ELECTRIC HEATERS . . Quick Selector Chart in new 8-page Catalog D-52 enables you to determine heating requirements of the space you want to heat electrically. Three curves cover well-constructed, uninsulated and poorly-constructed rooms. Once you have found type and rating from the chart, you can check through the rest of the catalog for standard sizes, list prices of portable and fixed unit heaters, radiators. Edwin L. Wiegand Co., 7505 Thomas Blvd., Pittsburgh 8, Pa.

Identify as IEN - 029

HOISTS . . Light weight of 8¾ lb. and capacity of 1½ ton are features of the Lug-All portable hoist which you can use for pulling, lifting, moving, tightening, positioning, straightening, stretching, at any angle. Pictures in 4-page Bulletin 261 show how to do some of these jobs with the hoist. Lug-All Co., 329-33 E. Lancaster Ave., Wynnewood 3, Pa.

Identify as IEN - 030

ELECTRICAL INSULATION . . Teflon-plastic sheet, tape and specialties made from the DuPont resin are presented in new 8-page Bulletin T-52 along with a review of physical, thermal, electrical, mechanical properties and uses. One such use is metal-clad Teflon for making printed electric circuits or small heating elements. Continental-Diamond Fibre Co., 2 Chapel St., Newark 16, Del.

Identify as IEN - 031

VIBRATION ISOLATION . . How to mount a lathe without drilling holes in the floor is shown by drawings and recommended procedures in new 4-page Unisorb bulletin. The procedures are for heavy-duty, production and light-weight lathes. They are based on the company's Unisorb mounting pads and cement. If you are interested, the company also will send you a copy of its 24-page booklet, "Why It Pays to Anchor Your Machines with Unisorb." Felters Co., 208-12 South St., Boston 11, Mass.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 784

Cleans 12 miles of aisles in 6 HOURS!

The new Multi-Clean Motorized Sweeper can be a time and money saver for you just as it is for this large paper products plant. These 8 ft. warehouse aisles, the factory floors, sidewalks, alleys and freight docks are all cleaned in a fraction of the time formerly required by the old fashioned push broom method. Powered by a gasoline engine, the sweeper combines a Palmyra filled rotary sweeping brush 36 inches long and a powerful built-in vacuum unit. With side brush attachment sweeping width is increased to 4 feet.

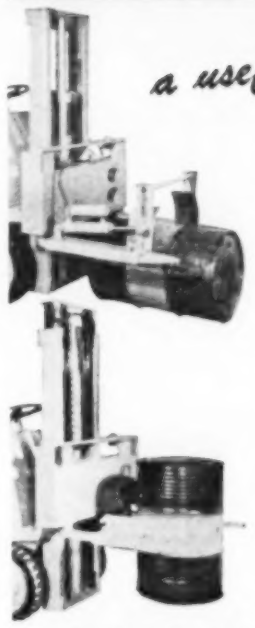
Took 3 men with push brooms 8 hours to do the job.

Picks up dirt, dust, steel shavings, paper, grass, small metal parts and milling debris. The Sweeper's trouble-free service, easy operation and low price make it the best buy in the motorized sweeper field. For more information write—

MULTI-CLEAN®
2277 Ford Parkway, Dept. IE-1 St. Paul 1, Minn.

If you write maker identify as IEN - 785

NEW! BAKER HYDRAULIC DRUM UP-ENDER



a useful attachment for BAKER FORK TRUCKS

With this attachment a fork truck can pick up and transport drums or other cylindrical objects either vertically or horizontally and rotate them 90°, for horizontal or vertical stacking. It can also tilt them forward 45° beyond horizontal for emptying at any height within the truck's lifting range. All operations are controlled by the operator from the driver's position. Attachment is quickly demounted by removing two lock pins, disconnecting a "snap-on" hose coupling and sliding the complete assembly off the forks.

For application on Baker 2000, 3000 and 4000 pound capacity fork trucks.

For Complete Information ask for Bulletin 1350-4.

THE BAKER-RAULANG CO.
1226 WEST 80th STREET, CLEVELAND 2, OHIO

Baker INDUSTRIAL TRUCKS

If you write maker identify as IEN - 786

Valuable Information FREE to Factory Executives, Engineers and Maintenance Dept. Officials

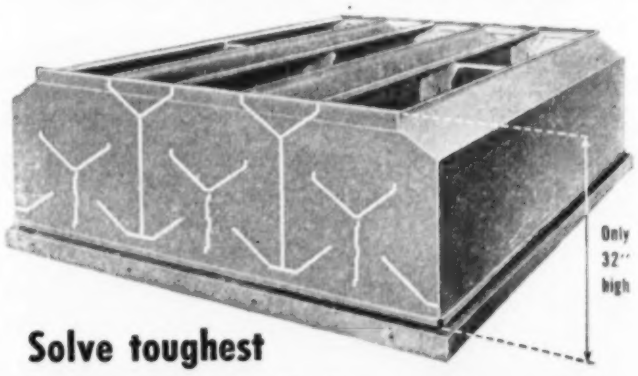
68 Useful Pages

New Manual shows how to properly install and service Clarage fans, blowers and air conditioning units . . . valuable information adaptable to almost any type of fan job. Sent without charge to key men who qualify by writing us on their company's letterhead.

YOU CAN RELY ON
CLARAGE

CLARAGE FAN COMPANY, Kalamazoo, Mich.
Sales Engineering Offices in All Principal Cities

If you write maker identify as IEN - 787



Solve toughest large scale ventilation problems with the low-contour Airmover

You can have all the ventilation you want—at economical cost. Airmover has high capacity. Only 32 inches high, built in rectangular units usable on any type roof. Install single units or any multiple, up to full length of roof. You literally can "open your roof to the sky", yet have full weather protection. Write for Bulletin AM-B.

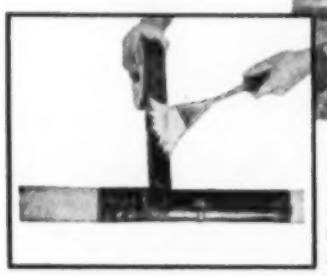
18511 Euclid Avenue, Cleveland 12, Ohio
The Swartwout Co.
Roof Ventilators and Ventilating Louvers
POWER PLANT EQUIPMENT • PROCESS INDUSTRY CONTROLS

If you write maker identify as IEN - 788

SOLVE CORROSION PROBLEMS

with TAPECOAT*

The Original Coal Tar Tape Protection for Pipe, Pipe Joints, Couplings, Tanks, etc.



Here's time-tested, coal tar protection against moisture, acids, alkalis, chemical fumes and other severe conditions—both underground and above ground. TAPECOAT gives greater protection, reduces maintenance and cuts pipe replacement cost. It's easily applied because it's sized to the job. Comes in widths of 2", 3", 4", 6", 18" and 24". It's quickly applied by use of a torch to bleed the coating for perfect bond. Wrapped spirally or "cigarette-wrapped."

Write for details and prices.

*Reg. U. S. Pat. Off.

The TAPECOAT Company
1553 Lyons Street, Evanston, Illinois
Originators of Coal Tar Tape Protection

If you write maker identify as IEN - 789

IF YOU SHIP YOU NEED THIS

SIGNODE
Strapping Outfit

Loss and damage are no respecters of products or containers. Protection in transit is a "must." To enable you to give your containers the best protection, Signode offers this low-cost strapping kit.

It includes everything you need—stretcher, sealer, strap dispenser, 180 lbs. of strapping and 5000 seals. The cost of this entire outfit is less than $100, depending on your location and the strap size you need.

A Signode fieldman is ready to give you complete details—and a free demonstration in your plant. For fast action, write *today.*

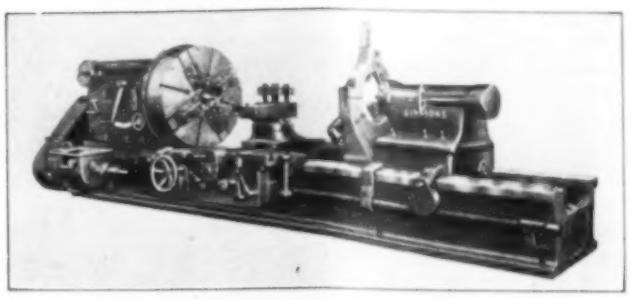
SIGNODE
STEEL STRAPPING COMPANY
2611 N. Western Ave., Chicago 47, Ill.

THIS SEAL MEANS SIGNODE SECURITY IN SHIPPING

If you write maker identify as IEN - 791

LATHE . . Heavy duty machine swings 4 ft., bed length 20 ft. and up

Source: SIMMONS MACHINE TOOL CORP.
1010 N. Broadway, Albany 1, N. Y.



To machine rolls, shell bodies

New design of the company's heavy duty 48-in. engine lathe employs a 30 to 60-hp. main driving motor. Normal spindle speed is between 1 and 144 rpm. by means of a variable voltage control, and three gear changes. Two of these changes are through an internal faceplate drive. One is direct to the Timken roller bearing spindle. The spindle carries a 4-in. center hole and takes a No. 7 Morse taper center.

The carriage is equipped for 56 feeds and thread pitches in a normal feed range between 0.0045 and 0.504 in. and a thread range from ½ to 56 per inch. The tailstock mounts a 7-in. spindle measuring 36 in. in length. Spindle travel is 20 inches. Tailstock length on the bed is 32 inches. Carriage traverse is by a 3-hp. motor. Headstock lubrication is provided by a pump and ½-hp. motor. The lathe is available with a 20-ft. minimum bed length and additional length in 5 ft. increments.

If you write maker identify as IEN - 792

DRIVE . . Variable pitch sheave assembles groove rings in multiple

Source: BARCLAY MFG. CO.
P. O. Box 3003-A, Knoxville, Tenn.

Rings are in stock

A sheave can be assembled with any desired number of grooves by adding rings to either side of a parent spider in this new Add-A-Ring sheave design. The assembly starts with a spider for a given bore range. The spider applies on a shaft of given diameter within the bore range by the application of a tapered bushing. Additional sheave rings can be added to either side of the spider. Broken or damaged grooves can be replaced quickly at comparatively small cost.

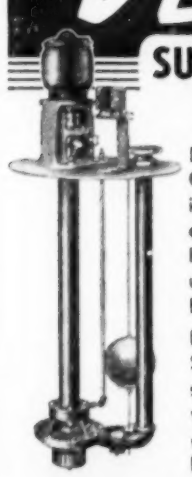
The sheave is available in a combination of A and B sections with grooves from 3.4 to 24.0 in. in pitch diameter. It is made in C section from 7 to 28 in., in D section from 12 to 28 in. and in E section from 20 to 28 inches. Each groove ring is packaged with the correct number of socket cap screws for its attachment.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 793

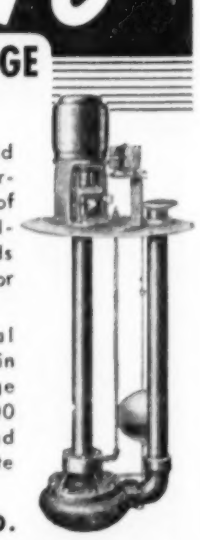
DEMING

SUMP *and* SEWAGE PUMPS



Deming Sump Pumps and Cellar Drainers include various types in a full range of capacities up to 3000 gallons per minute and heads up to 140 feet. Write for Bulletin No. 4600A.

New Deming Vertical Sewage Pumps range in sizes 2 to 4 inch discharge with capacities up to 1000 gallons per minute and heads up to 60 feet. Write for Bulletin No. 7600.



THE DEMING CO.
521 Broadway • Salem, Ohio

SEND FOR THESE TWO BULLETINS

If you write maker identify as IEN - 794

What Answers Can You Come Up With?

by Utilizing FULLERGRIPT

GRINDER SHROUD devised from Fullergript brush strip by maker of vertical die and surface grinder . . . concentrates coolant and protects operator from spray.

REMOVING GLOSS from molded counter top accomplished by buffing cylinder with widely-spaced but spiralled Fullergript brush strips. Engineering trick was to work out angle of spiral giving an even buff.

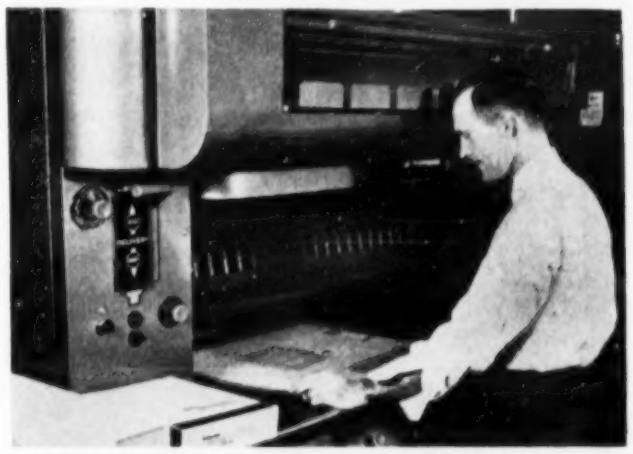
NEW ANSWERS to puzzling problems can often be found with the brushing action of Fullergript strips. You are introduced to new vistas of mechanical possibilities. And our engineers will work with you. Simply write and ask for information from . . .

FULLER BRUSH FULLERGRIPT

At home... in business, too

THE FULLER BRUSH CO., INDUSTRIAL DIV., 3583 MAIN ST., HARTFORD 2, CONN.

If you write maker identify as IEN - 795



Drawing Reproduction revolutionized

with Kodagraph Autopositive Paper

There are no limitations now on the types of drawings, prints, or documents which can be reproduced at Sikorsky Aircraft, Div. of United Aircraft Corp.

Translucent or opaque—it doesn't matter; even "two-sided" originals can be reproduced on *Kodagraph Autopositive Paper.* And each print is a sparkling intermediate—dense photographic black lines on durable, evenly translucent white paper—*ready* to produce as many direct-process prints as are needed.

How positive photographic intermediates are produced: Autopositive Paper is exposed in Sikorsky's direct-process machine . . . processed in standard photographic solutions. No negative step . . . no darkroom handling—*a revolutionary, economical operation that speeds print service to all departments!*

● **The direct-process prints and blueprints** received from vendors are reproduced on Autopositive Paper when extra copies are needed for the drafting room or shop. Deletions and additions can be made readily on Autopositive intermediates . . . saving drafting time.

● **Six copies are needed of each oscillograph record** obtained while flight-testing Sikorsky helicopters. Autopositive intermediates—which hold the faintest line—are made . . . and used to produce direct-process prints which are sharp and legible in every detail.

● **Engineering department reports,** charts, letters, etc. are reproduced on Autopositive Paper so that the required number of direct-process prints can be made in fastest time. A local blueprinter handles the "overflow" demand for Autopositive intermediates.

Write for a free copy of "New Short Cuts and Savings," which gives typical examples of the way Kodagraph Autopositive Paper is saving time and dollars in thousands of drafting rooms.

EASTMAN KODAK COMPANY
Industrial Photographic Division
Rochester 4, N. Y.

Kodak

If you write maker identify as IEN - 797

"KNOW HOW" IS IMPORTANT HERE!

In Universal's BIG LINE OF METAL HOSE Every type IS ENGINEERED for SPECIFIC RESULTS

For example —

U M H
Square-Locked Low Pressure Hose . . . engineered for efficiency in low pressure exhaust or intake installations.

U M H
Interlocked High Pressure Hose . . . engineered for efficiency in conveying steam, water, tar, etc.

U M H
Seamless Bronze Hose . . . engineered for efficiency in transmitting solvents, oil, refrigerants . . . under pressure, motion and vibration.

PLUS . . .
many additional types of metal hose for every type of installation.

Send us an outline of your requirements for experienced engineered recommendations. Ask for Catalog U-101, too . . . today!

UNIVERSAL METAL HOSE CO.
2131 SOUTH KEDZIE AVENUE • CHICAGO 23, ILLINOIS

If you write maker identify as IEN - 798

VULCAN
ELECTRIC SOLDERING TOOLS

Pygmy
Pencil Type

A very efficient tool for the pinpoint soldering of instruments, meters, gauges, small radios, printed circuits or any fine soldering, especially where space is cramped or where there is little clearance.

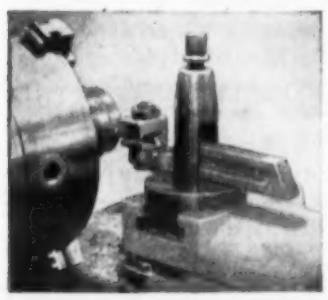
Length, 8¼". Weight, 7 oz.

Standard tip is ¼" diameter. 3/16" and ⅛" tips can be furnished, as well as tips for special purposes, bent to any angle or in various shapes.

VULCAN ELECTRIC CO.
DANVERS 8, MASS.

Vulcan Electric Soldering Tools, Solder Pots, Glue Pots, Branding Irons. Vulcan Electric Heating Elements.

If you write maker identify as IEN - 799

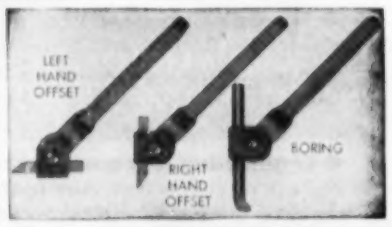


WALTON-AMERICAN Tool Holders

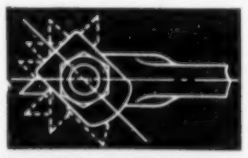
Hold with a perfect grip, tool bits, or boring bars in all sizes from ⅛" to 7/16", square or round. Besides gripping the tool securely top and bottom, it is held so that no lateral motion is possible.

VERSATILE MULTI-POSITION

The Walton - Americans are adjustable to bit size, and to any cutting position. All changes may be made at the machine without additional heads or set screws.



One Walton-American can be used in straight and right or left hand offset positions, or any other position around an entire circle (see illustration). Economy is doubly assured for very short bits may be used, and jaws will not break high speed steel or Stellite bits.



OTHER WALTON PRODUCTS — The well known *Walton Tap Extractor* for removing broken taps; and *Reps Pipe and Stud Extractor* for removing broken pipes, studs and screws (a product of Walton's affiliate, Reps Tool Company, Inc.).

Send for complete catalog No. 15 of all Walton Tools.

THE WALTON COMPANY
HARTFORD 10 • CONNECTICUT

NEW LITERATURE — Continued

Identify as IEN - 032

LABORATORY SUPPLIES . . 1,000-page General Catalog and 420-page "Inter-Joint Glassware" Catalog are available to those who use laboratory apparatus and supplies, scientific instruments. Ask for Catalog Requisition Form from the company. Scientific Glass Apparatus Co., 1000 Lakewood Terrace, Bloomfield, N. J.

Identify as IEN - 033

LATHE TOOLS . . Carbide-tipped and high-speed-steel tool bits in turning, cutting, threading designs are pictured with dimensions and list prices in 8-page Catalog 251052. Whitman & Barnes, 40602 Plymouth Road, Plymouth, Mich.

Identify as IEN - 034

LIQUID HEATING . . Submerged flame fires right into the corrosive liquid you want to heat. "Submerged Combustion" folder, 6 pages, tells how it works, suggests where to apply. Submerged Combustion Co., Box 267, Hammond, Ind.

Identify as IEN - 035

MACHINE TOOLS . . Automatic machines for boring, blade-finishing, grinding, center-lapping are reviewed in 32-page General Catalog 27312. Each review gives outline specifications and references to detail literature. A section at the rear covers grinding spindles, milling cutters, broaches, drill bushings. Ex-Cell-O Corp., 1202 Oakman, Detroit 32, Mich.

Identify as IEN - 036

MARKING MACHINE . . Blast-etch identification marks on parts of metal, glass, plastic, ceramic or fibre by means of Airgrit applied through rubber masks. Diagrams in 4-page bulletin, "190 Machine," show three standard models. Jas. H. Matthews & Co., 3948 Forbes St., Pittsburgh 13, Pa.

Identify as IEN - 037

MARKING TOOLS . . Hand stamps, steel type and holders, inspector hammers, press stamps and holders, fixtures and machines are some of the 100 items in 28-page Catalog 100. M. E. Cunningham Co., 1039 Chateau St., Pittsburgh 33, Pa.

Identify as IEN - 038

METAL TREATING . . Blackening procedures for copper and copper-alloy parts are detailed in 4-page Form 13021, using the company's Ebonol-C process. Instructions include a boiling point-concentration curve. Enthone, Inc., 440-44 Elm St., New Haven 2, Conn.

Identify as IEN - 039

MILLING . . Automatic machines that fit into a production line to do rough milling, finish milling, center drilling, weight-balance milling, turning, boring, facing are shown in Bulletin SC-53. Little drawings show dimensions of the work and give production figures. Motch & Merryweather Machinery Co., 715 Penton Bldg., Cleveland 13, Ohio

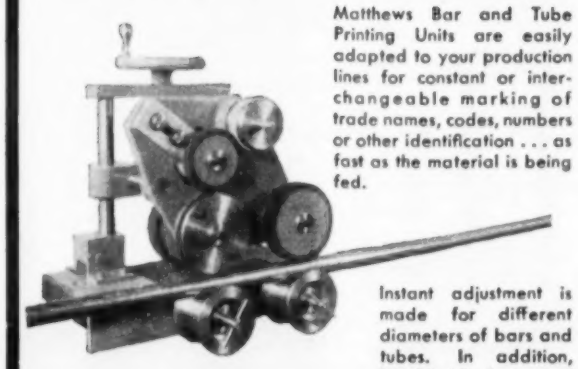
Identify as IEN - 040

MOTOR BRUSHES . . Replacement data in 68-page Catalog 61 on carbon brushes for fractional-horsepower and single-phase motors, classified by motor maker, portable tool maker and also by size in a separate section. Becker Brothers Carbon Co., 3448-52 S. 52nd Ave., Cicero 50, Ill.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 800

BAR AND TUBE MARKING SIMPLIFIED



Matthews Bar and Tube Printing Units are easily adapted to your production lines for constant or interchangeable marking of trade names, codes, numbers or other identification . . . as fast as the material is being fed.

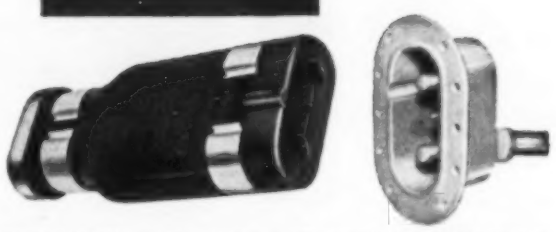
Instant adjustment is made for different diameters of bars and tubes. In addition, hand-held bar and tube markers are also available for limited production requirements.

Write Matthews today for complete information and literature. Include details of your bar and tube marking problems.

JAS. H. MATTHEWS & CO.
3962 FORBES ST. • PITTSBURGH 13, PA.
CLIFTON, N. J. BOSTON PHILADELPHIA CHICAGO

If you write maker identify as IEN - 801

CANNON PLUGS for storage batteries



Cannon Battery Connectors are used for starting aircraft engines, stationary power units, pumping engines, welding equipment, and numerous applications where circuits carrying high amperage and relatively low voltage require easy or frequent disconnect for efficiency.

The plugs are made with many variations in material, shell and contact design, with and without mechanical assists for making and breaking contact. Some have auxiliary contacts for signaling purposes or solenoid contact of the high amperage circuits to prevent arcing. All 25-odd types are of highest quality.

New Battery Connector Bulletin GB-4 available on request

CANNON ELECTRIC
Since 1915
CANNON ELECTRIC COMPANY
LOS ANGELES 13, CALIFORNIA

Factories in Los Angeles, Toronto, New Haven, Great Lakes Division, Benton Harbor, Mich. Representatives in principal cities. Address Inquiries to Cannon Electric Co., Dept. A-112, P. O. Box 75, Lincoln Heights Station, Los Angeles 31, Calif.

If you write maker identify as IEN - 802

STICKS TO ANYTHING!

SPRING-FELT Pressure-Sensitive Tape simplifies manufacture and maintenance

Impregnated and Non-Impregnated Types

ALL SIZES FOR SEALING AND GASKETING

Use it right from the roll, or cut into shapes. Adheres to metal, wood, glass —with a light finger-pressure.

Remains soft. Far outlasts rubber. Thicknesses: 1/16" to ¼". Widths: ¼" to 36". Write for Bulletin 501.

SPRING PACKING CORPORATION
332 South Michigan Ave., Chicago 4, Ill.

If you write maker identify as IEN - 803

HEAT SAVER!
INSTALLED WITHIN 3 HOURS!
...KEEP WINTER OUT OF YOUR PLANT!

PREST-O-MATIC
The COMPLETE ELECTRICAL DOOR UNIT

NOTHING ELSE TO BUY
•
NO ALTERATIONS REQUIRED
•
PERMIT FULL USE OF DOORWAY WIDTH

Fully automatic, motor-operated, for approach pull-cord, floor plate or electric eye control. Includes doors, frames, ALL hardware and motor operator all ready for installation by plant crew in 3 hours!

OPEN OR CLOSE IN 3½ SECONDS

Designed "in balance" for faultless functioning, unconditionally guaranteed; with or without pass doors. Trial orders have brought scores of reorders from large and small manufacturers. Get Catalog details!

CLARK DOOR COMPANY
519 Hunterdon Street • NEWARK 8, N. J.

If you write maker identify as IEN - 804

Write for this bulletin on Naylor Fabrication Service. Along with helpful data on standard fittings for light-weight pipe, it presents special fabrications to save material and labor in piping layouts. Send for your copy today.

Ask for Bulletin No. 525

NAYLOR PIPE COMPANY
1235 East 92nd Street, Chicago 19, Illinois
New York Office: 350 Madison Avenue, New York 17, N.Y.

If you write maker identify as IEN - 805

for the First time— predictable performance meters in "teardrop" flow ranges

Here, for the first time, is a laboratory flow meter which makes possible dependable and predictable flow rate measurement — even at a fraction of a cc/min. It employs the new F&P "TRI-FLAT" Pyrex glass tube, featuring three lands parallel to the tube axis to provide a tangential guide for a free spherical float. Steady float action — without bounce or wobble — assures constant flow coefficient. *For the first time,* low flow rate measurements are not only predictable, but repeatable, with high accuracy — *outmoding all other laboratory flow rate meters.*

Performance data for "TRI-FLAT" metering elements has been compiled in a new engineering handbook. Laboratory use of the new predictable performance elements and the handbook is simple and convenient. Previously required check calibrations can be forgotten.

A limited number of Laboratory Sets has been prepared to introduce this revolutionary development. These sets cover a flow range of 0.07 to 900 cc/min. of water or 5 to 37,000 std. cc/min. of air.

Each set includes:

- Five sizes of TRI-FLAT meters with standard taper ground glass joints.
- Matching, precision spherical sapphire and constant density floats.
- Engineering TRI-FLAT data handbook.
- Fine hardwood carrying case.

Priced complete at $95 f.o.b. Hatboro. Avoid delay in bringing the advantages of this program to your laboratory by placing order now.

FLOWRATOR

FISCHER & PORTER COMPANY
1910 County Line Road, Hatboro, Penna.

If you write maker identify as IEN - 807

ROOFS . . Fiberglas mat, liquid asphalt for cold roof repair

Source: OWEN-CORNING FIBERGLAS CORP.
100 Nicholas Bldg., Toledo 1, Ohio

Four men, 40,000 sq. ft. per day

Old or worn asphalt roofs of manufacturing plants, warehouses, industrial buildings, schools, stores, apartments can be repaired by application of the company's new Corotop materials. They consist of a Fiberglas mat, weighing 2 lb. per 100 sq. ft., in rolls each weighing 11 lb., and a liquid asphalt that is packaged in 55-gal. drums.

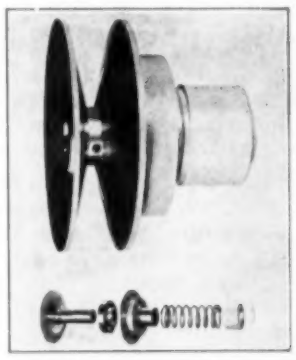
Application is made by spraying or brushing a coat of the asphalt on the old surface, after it has been swept clean, and then by laying the mat and brushing it down flat. This is followed with a second coat of the liquid asphalt. It is smoothed by brushing and allowed to dry for 12 hours. After this interval, surface is given a final coat of liquid asphalt.

The materials are applied cold on any flat or vertical surface. The asphalt will cling tightly to brick, masonry, metal or wood as well as to composition roofing, damp or dry.

If you write maker identify as IEN - 808

DRIVE . . Variable speed control rates to ¾ hp., 2.75 to 1 ratio

Source: GERBING MFG. CORP.
11803 Milwaukee Ave., Northbrook, Ill.



Ask for Catalog 852

A stationary disc with an integral extended hub and two sliding discs form the V-belt groove in this new No. 50 Var-A-Cone sheave. The smaller of the two sliding discs nests within the outer one as the backing spring brings the outer disc toward maximum pitch position. As this disc retracts and pitch diameter decreases, spring loaded pins, contained within the inner disc, are forced out of the groove in the hub and into a groove in the outer disc to make the two act together as a single unit. This permits the belt to ride on a smooth surface between minimum and maximum pitch diameters without interruption.

The sheave is designed to mount on a motor. It rates ¾ hp. at 1,750 rpm. Pitch is changed by moving the motor on an adjustable base, which the company is prepared to supply. Standard bore is ½, ⅝ and ¾ inch. Maximum motor movement for the ratio range is 2⅜ inches. The sheave takes an A-section belt. Pitch diameter ranges from 1.73 to 4.75 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 809

an ACCO product

HELICOID

The gage that retains its original accuracy longer, lasts longer, costs less per gage, per year

• HELICOID GAGES, which do not have gear teeth to wear out, are made in a full range of pressures . . . in various sizes and shapes, with black, white and phosphorescent faces. For wall or stem mounting, flush or panel mounting, or flangeless. No finer gages are made. Helicoid Gages cost less in the long run.

Write today for the Helicoid Gage catalog

ACCO

HELICOID GAGE DIVISION
AMERICAN CHAIN & CABLE
929 Connecticut Avenue • Bridgeport 2, Connecticut

HELICOID *Pressure • Vacuum* **GAGES**

If you write maker identify as IEN - 810

APPLYING SOUND INSULATION?

SPRAY IT ON...EASIER...FASTER WITH

THE VERSATAL "TORNADO"

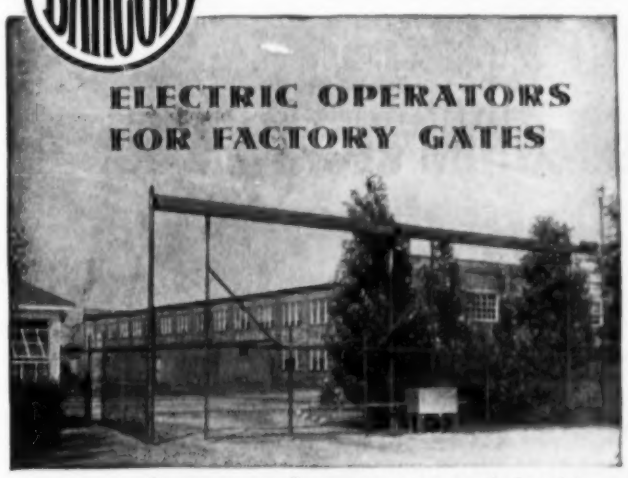
- Air-operated Versatal "Tornado" pumps materials directly from original 54-gallon drums.
- Speeds, simplifies, cuts cost of material application.
- Pumps through long lines of hose or pipe.
- Handles heaviest material even at low temperature.

FREE! A book of ideas on how Alemite Versatal Equipment can help solve your material handling problems. Address your request to Alemite, Dept. B-13, 1830 Diversey Parkway, Chicago 14, Ill.

ALEMITE *Versatal* SPRAY PUMP EQUIPMENT

If you write maker identify as IEN - 811

BARCOL



Power-operated entrance gates to industrial plants are important for adequate protection and the proper control of traffic. The Barcol Electric Gate Operator, as illustrated above, is mounted in a weatherproof box at the side of the opening and attached by a chain at the correct points to insure smooth operation, with remote push-button control in the guardhouse. Barcol Operators are made for various types and sizes of such gates — let our representative give you the details.

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

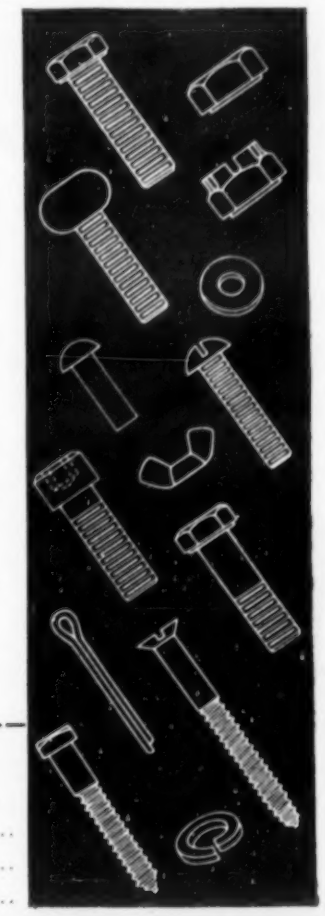
BARBER-COLMAN COMPANY, 114 Mill St., Rockford, Ill.

If you write maker identify as IEN - 812

HARPER
HAS THEM!

Everlasting Fastenings by the Dozen or the Million!

- Specialists in bolts, screws, nuts, rivets, washers and fastening accessories!
- In brass, bronze, copper, aluminum, stainless steels, Monel!
- For all problems involving corrosion, heat, abrasion, stress, appearance!
- America's largest producer of non-corrosive fastenings!
- Larger stocks, greater selection —over 7000 items!
- Deliveries from nearby warehouse and distributor stocks!
- Ask for complete Harper Price List and Stock Book!

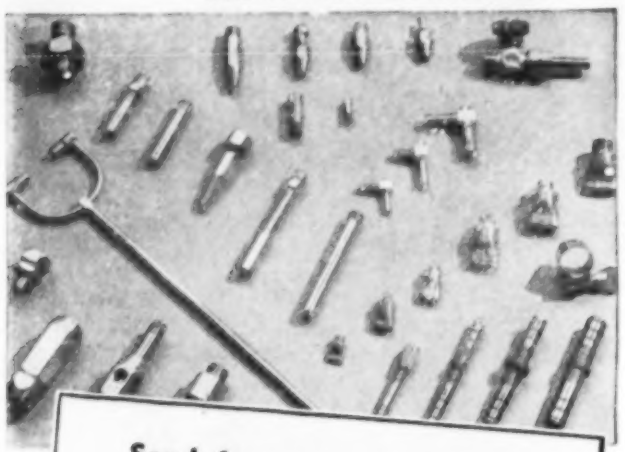


HARPER
EVERLASTING FASTENINGS

The H. M. Harper Company
8211 Lehigh Ave.
Morton Grove, Ill.
Rush Harper Price List and Stock Book.

Name.....
Address.....
City.....State.....

If you write maker identify as IEN - 813



Send for our new Bulletin 12K containing the latest in

High Vacuum Pumps,
Glass Working Machinery,
Burners for Glass Blowing,
Auxiliary Burner Equipment,
Glass Blowers' Supplies,
Pure Gum Rubber Tubing,
Valves, Gauges, etc.
Blowers and Gas Pumps.

RESEARCH VACUUM SUPPLY COMPANY
MANUFACTURERS RV DISTRIBUTORS
Glass Blowing Equipment — High Vacuum Pumps and Accessories
3434 MONTROSE AVENUE CHICAGO 18, ILLINOIS

If you write maker identify as IEN - 814

Sarkes Tarzian

SELENIUM RECTIFIER Embedments

Where SIZE, WEIGHT and EFFICIENCY are factors, Sarkes Tarzian Embedded Rectifiers offer the solution to a difficult power conversion problem. Various sizes and shapes are available and with a wide range of power output. Tarzian Embedments are impervious to all humid and salt atmospheres. Experienced Sarkes Tarzian engineers are ready to assist you with your problem.

Write Caroline for your free copy of Embedded Rectifier Catalog B-1

Sarkes Tarzian, Inc. *Rectifier Division*
DEPT. B-1 • 415 NORTH COLLEGE AVENUE • BLOOMINGTON, INDIANA

If you write maker identify as IEN - 815

ANGLE STEEL BENCHES... *Increase* Workers' Output!

Workers produce better with less fatigue using ANGLE STEEL shop equipment because it has... ...Correct heights, smooth surfaces with inclosed backs and ends, rigid stability, scientific bracing, convenient shelves and drawers. Benches are available in various stock styles, heights, widths and lengths with wood or metal tops. Handsome baked enamel finish. Suitable for single unit or continuous bench set-ups.

Helpful literature . . . FREE

ANGLE STEEL, Inc.
Dept. 3 Plainwell, Michigan

SEND *FREE* Literature . . . we're interested in: ____Benches ____Machine Tender Trucks ____Stools.

Company _____

My Name _____ Title _____

Address _____

NEW LITERATURE—*Continued*

Identify as IEN - 041

PLASTIC PAINT . . Chemical resistance of Tygon paint is given in a two-page table for materials from acetaldehyde to zinc salts in new 16-page Bulletin 730. Application instructions tell what precautions and primers to use. United States Stoneware Co., Box 350-A, Akron 9, Ohio

Identify as IEN - 042

PIPE EXPANSION JOINTS . . Corrugated flexible designs expand and contract with temperature change and need no packing. "Design Guide," revised 20-page Bulletin CMH-127R, describes free-flexing and controlled-flexing types by selection factors, axial motion, construction materials and installation. Flexonics Corp., 1333 S. Third Ave., Maywood, Ill.

Identify as IEN - 043

PLASTIC MATERIALS . . Hairbrushes to windows is the scope of products molded from Plexiglas acrylic powders that are illustrated in 12-page Booklet PL-86A. Rohm & Haas Co., 220-24 Washington Square, Philadelphia 5, Pa.

Identify as IEN - 044

PLASTIC PIPE . . Advantages, uses, sizes, working pressure ratings, chemical resistance of flexible, semi-rigid, rigid high-impact and rigid unplasticized polyvinyl chloride types. Two-page chart presents a summary with details in balance of 16-page bulletin, "Plastic Pipe." Triangle Conduit & Cable Co., 10 Codwise Ave., New Brunswick, N. J.

Identify as IEN - 045

HAND PUMPS . . For dispensing 7 to 28 gpm. of oil, solvent, syrup and other liquid direct from drums or tanks in a steady flow. Five models and accessories are shown in 6-page Bulletin HP-206 in a number of arrangements. Blackmer Pump Co., 1809 Century Ave. S. W., Grand Rapids 9, Mich.

Identify as IEN - 046

VERTICAL PUMPS . . Eight pages of curves, tables, pictures will help you select small pumps for coolant circulating, air conditioning, liquid transfer. Bulletin 52-B-6975A. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis.

Identify as IEN - 047

PUMPS . . Centrifugal designs for "abusive applications" are given in new Selector Bulletin 952 as data summaries. Each summary includes a sectional drawing, assembly view, condensed description, reference to detail literature. Nagle Pumps Inc., 1241 Center Ave., Chicago Heights, Ill.

Identify as IEN - 048

RECORDING INSTRUMENTS . . Complete running record of temperature, pressure and other variables from your plant instruments appears as neat columns of figures typed in page form at the output of the Metrotype printer, according to 8-page "Metrotype Systems." How it is transmitted by teletype and a sample record form part of the bulletin. Metrotype Corp., 523-27 W. 76th St., Chicago 20, Ill.

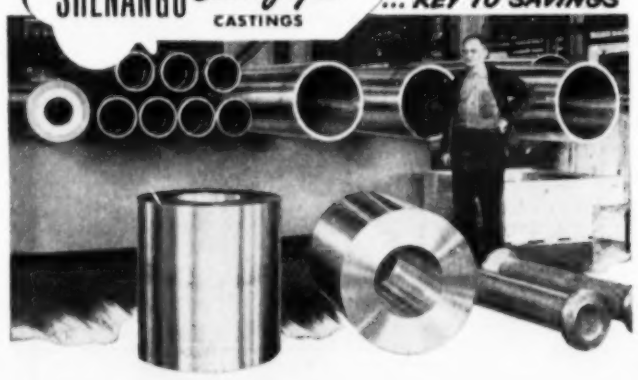
Identify as IEN - 049

RECORDING INSTRUMENTS . . For temperature, pressure, flow, pH and other variables is the subject of 48-page Catalog 1520. Schematic diagram shows continuous-balance principle employed in ElectroniK potentiometers used as the basic instrument. Measuring elements, recorder designs and a console desk are described in detail. Minneapolis-Honeywell Regulator Co., 4456 Wayne Ave., Philadelphia 44, Pa.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 816

SHENANGO *Centrifugal* CASTINGS ... KEY TO SAVINGS



YOU'LL DO BETTER WITH SHENANGO CENTRIFUGALLY CAST PARTS

HERE'S WHY . . . Shenango centrifugally cast parts offer many inherent advantages that can help you avoid trouble and save time and money.

For example, due to the centrifugal casting action, you get a more uniform, pressure-dense metal, free from sand inclusions, blow holes and other often-hidden defects. You get higher strength, greater wear resistance, better elongation—longer lasting parts, better able to withstand severe service of any kind.

So if your plans call for symmetrical shapes, anywhere from tiny bushings to huge rolls, ferrous or nonferrous, rough or finished, check with Shenango. Company after company finds it a good way to do a better job at lower cost.

SHENANGO-PENN MOLD COMPANY
Centrifugal Castings Division
Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO
ALL RED BRONZES • MANGANESE BRONZES • ALUMINUM BRONZES
MONEL METAL • NI-RESIST • MEEHANITE METAL

If you write maker identify as IEN - 817

SAFETYMIX
EXTRA SHOWER SAFETY
. . . at no extra cost

PROTECTS AGAINST SUDDEN SCALDS
. . . Safetymix, world's leading pressure-actuated non-scald shower valve gives safety in the shower. Safetymix automatically shuts down flow if either hot or cold water fails.

HOLDS SHOWER TEMPERATURE CONSTANT
. . . Even with excessive pressure fluctuations up to 85%, Safetymix still maintains constant discharge temperature.

LIFETIME SHOWER VALVE
. . . The most rugged shower control valve made. Only Safetymix has the patented Flow Control Spindle with but *one* moving part to control *all* valve functions. Built to last a lifetime.

GET FREEDOM FROM COSTLY MAINTENANCE
. . . Safetymix is designed with self-cleaning action to prevent clogging and save water. All parts accessible from the front. As easy to fix as a faucet.

100,000 Installations Can't Be Wrong. Used by U. S. Army, Navy, Merchant Marine, colleges, industrial plants, hotels, clubs, hospitals, apartments and homes.

Send for bulletin and prices.

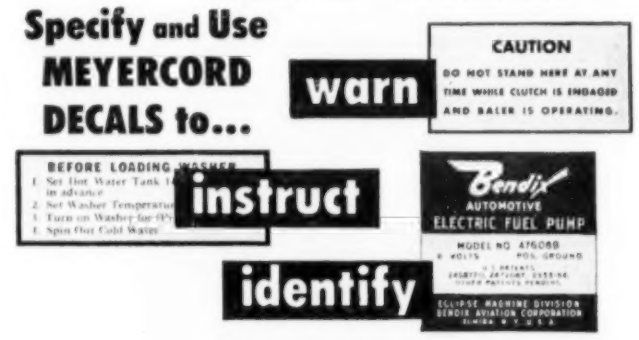
SAFETYMIX — MADE BY THE MAKERS OF THE NEW SYMMONS TEMPERING-CONTROLLER

Symmons ENGINEERING COMPANY
791 TREMONT ST., BOSTON 18, MASS.

If you write maker identify as IEN - 818

Specify and Use MEYERCORD DECALS to...

warn



identify

Low Cost... Durable... All Colors, All Surfaces

Among the many new applications of decals for American industry is the tough Meyercord acid, chemical and weather resistant identification of dangerous chemical containers. If you process and ship dangerous chemicals, be sure to ask for full information.

Meyercord Decals have been adopted by cost-conscious manufacturers in thousands of industries...as nameplates, trademarks, instructions, markers, wiring diagrams, safety warnings and many other important applications.

But "just any decal" won't do the job on "just any surface". For today's rigid requirements, Meyercord Decals are carefully laboratory-engineered to assure complete and perfect adhesion to any commercial surface or finish. Write us for information on our complete technical consultation and designing services.

FREE CATALOG
Shows hundreds of uses for durable, washable decal nameplates. Write

THE MEYERCORD CO.
World's Largest Decalcomania Manufacturers
DEPT. A-315, 5323 WEST LAKE STREET, CHICAGO 44, ILLINOIS

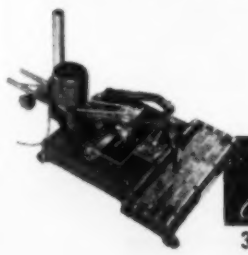
If you write maker identify as IEN - 819

The Green Engraver

ENGRAVES
ROUTS
PROFILES
and MODELS

Used and endorsed by tool and die, electronic, machine, plastics, radio, electrical and instrument manufacturers. A *real money saver.*

Specify the Green Engraver for precision engraving on metal, plastics, wood, glass, hard rubber etc. . . . engraves panels, name plates, scales, dials, molds, lenses, instruments, instruction plates, directional signs . . . by simple tracing from master. *Routing, profiling and three dimentional modeling indicate its versatility.* Electric etching attachment available.



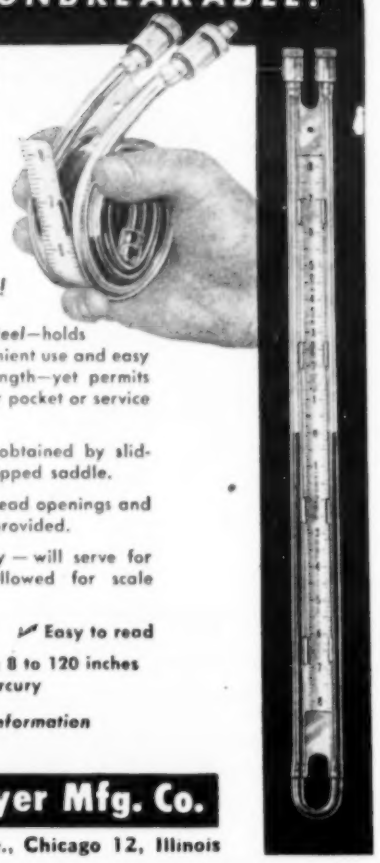
Special attachments and engineering service available for production work.

FREE: Brochure—yours upon request.

Green Instrument Co.
INCORPORATED
373 PUTNAM AVENUE · CAMBRIDGE · MASS.

If you write maker identify as IEN - 820

NOW IT'S UNBREAKABLE!



DWYER
SERIES 1211
Flexible
SLACK-TUBE
MANOMETER

Just roll it up and tuck it away!

- *Scale—convexed spring steel*—holds Slack-Tube rigid for convenient use and easy reading—regardless of length—yet permits rolling into small space for pocket or service kit
- *Zero Adjustment*—easily obtained by sliding spring-steel scale in lipped saddle.
- *Connections*—⅛" pipe thread openings and rubber tubing adapters provided.
- *Tough Vinyl Plastic Body* — will serve for years. Several inches allowed for scale adjustment.

✓ Extremely Accurate ✓ Easy to read
✓ Standard ranges from 8 to 120 inches in water or mercury

Write for complete information

F. W. Dwyer Mfg. Co.
307 S. Western Ave., Chicago 12, Illinois

If you write maker identify as IEN - 821

FOR MATERIAL HANDLING—
more and more—the swing is to wide-base pneumatic tires

GENERAL
INDUSTRIAL PNEUMATIC TIRES

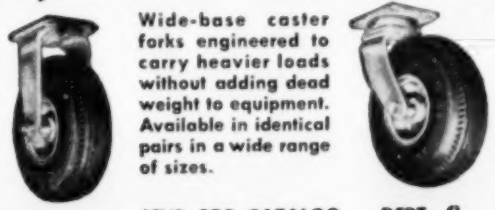
More Designers are specifying wide-base General Pneumatics. They know Generals add these extra selling points to handling equipment.

SAVE TIME · MONEY · LABOR

- *MORE LOAD CAPACITY AT LOW OR HIGH SPEEDS*
- *CUSHION EQUIPMENT AND LOADS REDUCING BREAKAGE AND SPILLAGE*
- *SAVE HIGH COST FLOORS AND FLOOR SURFACES*
- *SLOW, EVEN WEAR FOR LONG SERVICE*
- *HIGH FLOTATION FOR EASIER ROLLING OVER SOFT GROUND*
- *ROLLS EASIER, SMOOTHER OVER ALL SURFACES*

Available separately or in assemblies of Tires, Tubes and Wheels. Size O.D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

Rigid **CASTER FORKS** *Swivel*



Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

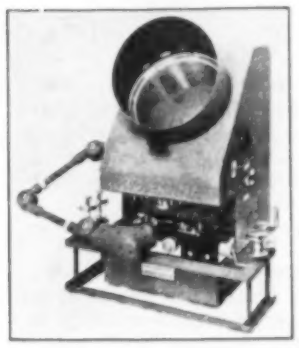
SEND FOR CATALOG . . . DEPT. 6

THE GENERAL TIRE & RUBBER CO. AKRON, O.

If you write maker identify as IEN - 823

MAGNIFYING . . Microscope and projector for textile inspection

Source: SJOSTROM MACHINE CO.
13-17 Union St., Lawrence, Mass.



Made in Switzerland

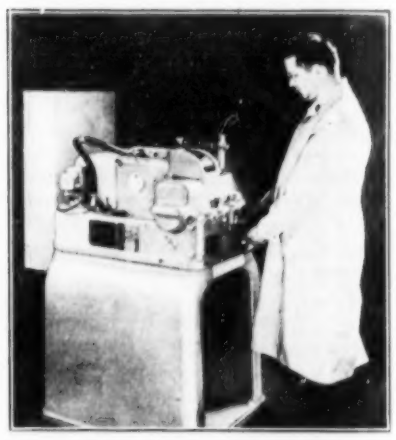
Projectina is a new combination optical instrument to count threads per inch and inspect yarns, fibers and textile samples. Work to be inspected is placed on a stage plate that can be adjusted universally. The image is then projected to an 8-in. ground glass screen with magnification from 3 to 20X. It also can be observed through an eye piece for magnifications of 50, 100 or 400X. This eye piece takes the place of the screen. Magnifications to 1000X are provided through a small eye piece on the face of the housing just beneath the screen position.

Work can be illuminated in transparency when the instrument is employed as a diascope. In this case the image, correctly focused on the ground glass screen, is magnified 10 or 20X. The screen is equipped with vertical and horizontal scales. By means of direct and reflected illumination together, the surface of the work is reproduced on the screen in natural colors when the instrument is employed as an episcope. A combination of the two, for operation of the instrument as an epidiascope, provides simultaneous illumination, direct and in transparency, for sharp definition of fibers, threads, tissues and any defects in the product being examined.

If you write maker identify as IEN - 824

THREADING . . Grinding machine for external threads, 20 to 124 pitch

Source: SHEFFIELD CORP.
719-23 Springfield Ave., Dayton 1, Ohio



Ask for Catalog 133-52

Model 133 is a new thread and form grinder added by the company to its line of machines, previously described IEN-8380-43. The new machine will handle work to ½ in. in diameter and to 4 in. between centers. It employs a multi-rib wheel like the design used on the initial machines. Finest pitch recommended is 124 on U. S. form. Finer pitches can be ground in the Whitworth form.

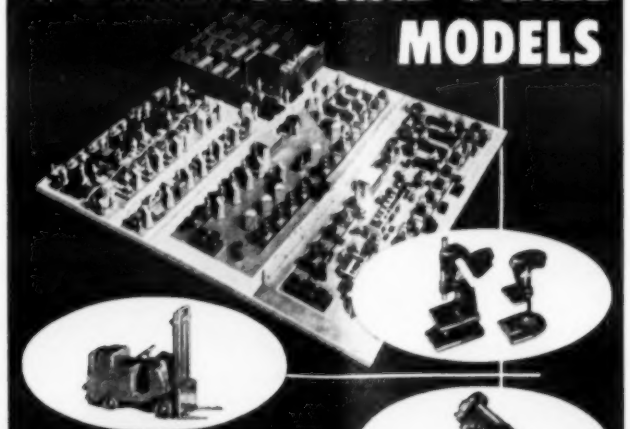
Change over from one pitch to another is through gears that drive the lead screw. Wheel dressing is by the company's Crushtrue equipment. The machine is designed particularly to grind fine pitch threads on precision taps, thread plug gages, micrometer spindles, elevating and adjusting screws employed in precision instruments.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 825

NEW MANUFACTURING TECHNIQUES DRASTICALLY CUT COSTS OF . . .

3-DIMENSIONAL SCALE MODELS

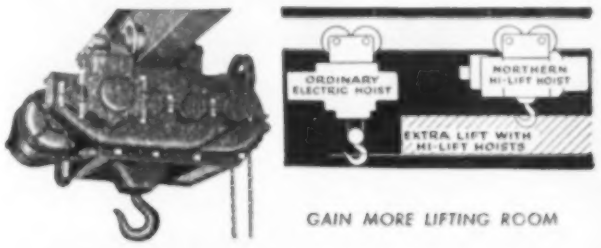


Complete plant layouts . . . standard or special machinery and miscellaneous equipment available. Over 12,000 items in stock. Prompt deliveries.

VISUAL PRODUCTION PLANNING, INC.
Connellsville, Pennsylvania

If you write maker identify as IEN - 826

the heavy-duty hoist for low headroom service



GAIN MORE LIFTING ROOM

NORTHERN HI-LIFT
HEAVY-DUTY
ELECTRIC HOISTS

Heavy load capacity combined with high hook lift—unique in heavy-duty hoists—is the major outstanding feature in NORTHERN HI-LIFT HOISTS, providing for more efficient use of work and storage areas. Capacities: up to 15 tons, standard. Cab control if desired.

Write for Bulletin H-110-163

NORTHERN ENGINEERING WORKS, 2615 Atwater St., Detroit 7, Mich.

NORTHERN CRANES AND HOISTS

If you write maker identify as IEN - 827

Improved Method Centrifugal SPRAY DRYER *and* CONCENTRATOR*

CONTRACT DRYING
We invite inquiries for Contract Drying in our fully equipped, Stainless Steel Plant in Chicago. Shipments can be made direct to our Railroad Switch Track or Truck Docks.

THE DRYING AND CONCENTRATING COMPANY DRYER

Improved method for **DEHYDRATING**

Solutions, emulsions and materials which can be handled in a liquid form including:

Chemicals
Pharmaceuticals
Milk Products
Blood or Blood Plasma
Soups, Vegetables, etc.

This complete spray drying plant employs a unique centrifugal-type spray head, and consists of a Drying Chamber, Concentrator, Air Heating Unit, Air Filter, Air Supply Fan, Powder Cooler and Sanitary Pumps with variable speed drives for handling the liquid material and controlling the moisture.

***CONCENTRATOR AVAILABLE SEPARATELY**

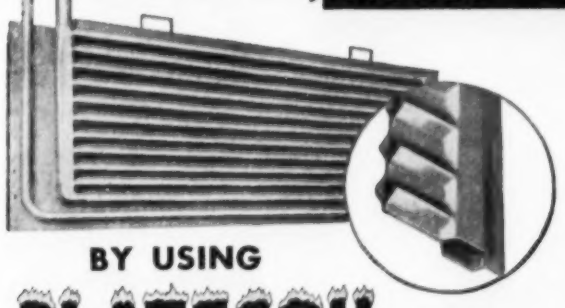
The Concentrator can be operated as a separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining neutral flavors and vitamins.

3638

DRYING and CONCENTRATING CO.
320 SOUTH MICHIGAN AVENUE, CHICAGO, ILLINOIS

If you write maker identify as IEN - 828

YOU SAVE
- STEEL
- MANHOURS
- MONEY



BY USING

PLATECOIL FOR
TANK HEATING AND COOLING

YOU SAVE CRITICAL STEEL because "Platecoils" require less than ½ the steel used in pipe coils of the same surface area. A 22" x 119" Platecoil weighs 95 lbs. against 239 lbs. for an equivalent 2" pipe coil. 144 lbs. steel saved. YOU SAVE CRITICAL MANHOURS because "Platecoils" are easily installed, cleaned or replaced in minutes . . . No down-time . . . No tank dumping. Many manhours saved.
YOU SAVE MONEY because "Platecoils" cost up to 50% less in initial cost and require less maintenance. Investigate "Platecoils" today.

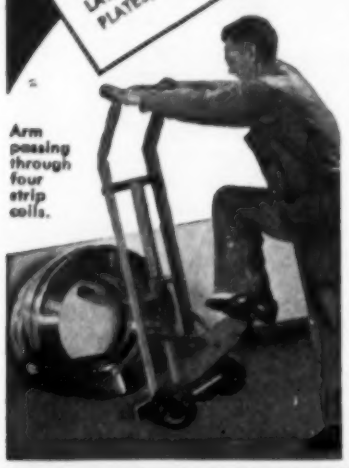
Send for complete technical manual and descriptive Bulletin No. P56

PLATECOIL
Division
KOLD-HOLD MFG. CO.
LANSING 4, MICHIGAN

If you write maker identify as IEN - 829

Anything with a HOLE through it - HANDLED FASTER and with less labor - by using SABIN COILTRUCK

ARTICLES SUCH AS STRIP COILS, WIRE COILS, BOX STRAPPING, WHEELS, TIRES, LATHE CHUCKS OR FACE PLATES, ETC.



Arm passing through four strip coils.

Simply run truck up to article, passing arm through hole, then pull back on handle to pick up load. Third wheel feature minimizes trucking effort.

WRITE FOR BULLETIN

OTHER SABIN ONE MAN TRUCKS:

Barrel, Keg, Box and Package Trucks; Tote Pan, Carboy, Shop and Special Trucks.

Write for Bulletin No. 48-A

The SABIN MACHINE CO.
6540 Carnegie Avenue
Cleveland 3, Ohio

If you write maker identify as IEN - 830

in just 3 seconds

. . . you can read any surface temperature in your plant . . . accurately and easily . . . with the Alnor Portable Pyrocon.

Compact in size, complete in precision design and workmanship, this rugged instrument assures the highest standards of speed, accuracy and dependability. You can take temperature readings on materials in process, the finished product or the heated equipment itself—in as few as 3 seconds!

Alnor Portable Pyrocons come in scale ranges to 2000° F., with thermocouples for every application. You'll find full details on the Pyrocon exactly suited to your operations in Bulletin 4257. Send for your copy now. Write: Illinois Testing Laboratories, Inc., Room 517, 420 N. LaSalle St., Chicago 10, Ill.

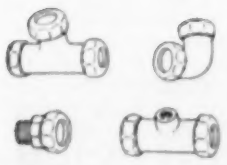
Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 831

plain-end pipe Joined in 30 seconds

A permanent, "Flexible-Tight" joint in just 30 seconds. No threading, no exact pipe fitting or alignment necessary. Resilient rubber gaskets in the Dresser Style 65 give you permanent protection against vibration, normal expansion and contraction stresses that spring leaks in other joints.

Sizes 3/4" to 2". Write for catalog.



Complete line of couplings, ells, tees, etc. available.

DRESSER "NO-THREAD" FITTINGS

Dresser Mfg. Div., 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston, Tex.; 101 S. Bayshore Highway, S. San Francisco, Calif. — Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco — In Canada: 629 Adelaide St., W., Toronto.

NEW LITERATURE—Continued

Identify as IEN - 050

SELENIUM RECTIFIERS . . Embedded in a casting resin to meet severe operating conditions. Catalog B-1, 4 pages, lists units from .005 to 6 amperes. Sarkes Tarzian Inc., 413-17 N. College Ave., Bloomington, Ind.

Identify as IEN - 051

RELAYS . . Subminiature, hermetically sealed and other telephone type units are grouped in a two-page summary by application, characteristics, contact type. Details follow in rest of 12-page Catalog 1702-A. Automatic Electric Co., 1031-35 W. Van Buren St., Chicago 7, Ill.

Identify as IEN - 052

RETAINING RINGS . . Fasteners for internal and external application are summarized by two-page Selector Guide at start of new 52-page Truarc catalog, followed by technical data and a particularly good job of showing how to use them in product design. A collection of case histories shows before-and-after design with cost savings. Waldes Kohinoor Inc., 47-18 Austel Place, Long Island City 1, N. Y.

Identify as IEN - 053

RIVETS . . Blind rivet with threads that you can use in sheet metal, as a standard fastener and for a number of special applications that are shown in revised 18-page Rivnut bulletin. This bulletin also tells how to drill holes, standard fastener sizes, hand and power installation tools, strength data. B. F. Goodrich Co., 448-52 S. Main St., Akron 11, Ohio

Identify as IEN - 054

SCAFFOLDS . . That assemble without tools from a line of welded tubular members are shown in new 8-page Catalog 952 by sequence pictures of four major features. Automatic Devices Inc., 1258-62 Hodiamont Ave., St. Louis 12, Mo.

Identify as IEN - 055

STEEL SHELVING . . All you need is a screwdriver and a wrench to assemble "custom-built" steel shelving from the wide variety of components shown in 20-page Catalog S-300. Penn Metal Corp. of Pa., 50 Oregon Ave., Philadelphia 48, Pa.

Identify as IEN - 056

SOCKET SCREW . . Company has published follow-up literature giving list prices and typical applications for its Unbrako button-head socket screw which won instant recognition when introduced last June. The design features appearance and strength. Sizes are No. 8 to 5/8 inch. Form 856-2, 4 pages. Standard Pressed Steel Co., Box 732, Jenkintown, Pa.

Identify as IEN - 057

SOLENOIDS . . Performance curves and other technical data on push or pull solenoids, solenoid-operated switches, snap-action and plunger-operated switches and a pressure switch for liquid level control. Loose-leaf catalog, 16 sheets. Soreng Mfg. Corp., 9565 Soreng Ave., Schiller Park, Ill.

Identify as IEN - 058

STEAM SEPARATOR . . Remove 99 per cent of entrained liquids, solids, oil, dirt from steam and air lines by mechanical separator with internal directional vanes. Drawings show you how to apply. Hi-eF Bulletin 501, 8 pages. V. D. Anderson Co., 1931 W. 96th St., Cleveland 2, Ohio.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 832

THIS TAPE SEALS . . . AND RE-SEALS!

The weatherproof Polyken Tape No. 214 that seals these cans of small aircraft parts has two jobs to do for Bendix. First, it must seal the cans to meet government specifications. Then, when the canned parts are opened by mechanics in the field, the same piece of tape re-seals the can so that the unused aircraft parts are protected from moisture and grit. Polyken Tape does both jobs easily and a lot of waste is eliminated. Let Polyken Tapes help you solve your packaging problems.

Get your free copy of "Tape is a Tool". Ask your Polyken Distributor or write Polyken, Dept. IEA, 222 W. Adams St., Chicago 6, Illinois.

Polyken®

INDUSTRIAL TAPES

Department of Bauer & Black · Division of The Kendall Company

If you write maker identify as IEN - 833

REDUCE THE OVERHEAD THAT IS UNDERFOOT

Darnell Casters

Free Manual

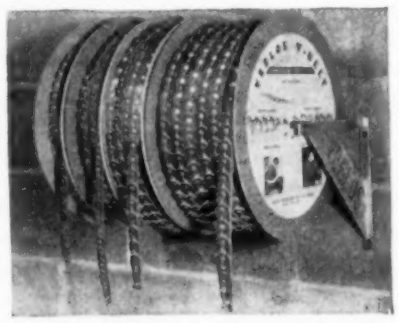
DARNELL CORP., LTD.
DOWNEY, (Los Angeles County) CALIF.
60 Walker Street, New York 13, N.Y.
36 North Clinton, Chicago 6, Illinois

If you write maker identify as IEN - 834

What do you do when it takes hours . . . sometimes days . . . to change v-belts?

1. Put one or several maintenance men on the job . . . and pay for repairs while production stands still.
2. Pay overtime . . . and have repair costs eat away your profits.
3. Standardize on VEELOS

. . . and change belts in up to 1/10th the time . . . saving labor, saving time and overtime. You get peak operating efficiency plus a saving on inventory. Any length v-belt can be made up from a 100-foot reel of Veelos.



VEELOS THE LINK V-BELT

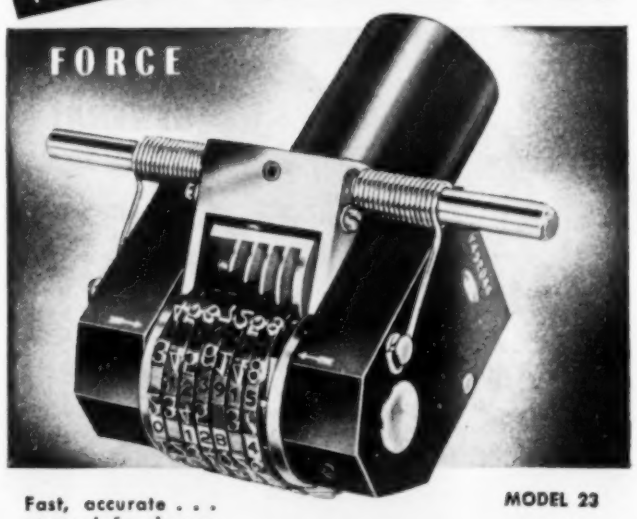
Write for free VEELOS DATA BOOK which includes details on construction, installation and use of Veelos.

MANNEIM MANUFACTURING & BELTING CO.
651 Manbel Street, Manheim, Pa.
Adjustable to Any Length • Adaptable to Any Drive

If you write maker identify as IEN - 835

NUMBERING IN METAL

indenting NUMBERING HEADS



Fast, accurate . . . rugged for heavy power press use. Figures from 1/64" to 3/8" or larger as required.

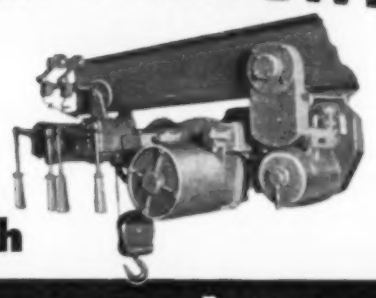
MODEL 23

Write for prices and catalog of all models.

WM. A. FORCE & COMPANY, INCORPORATED
216 NICHOLS AVENUE, BROOKLYN 8, N. Y.

If you write maker identify as IEN - 836

STRETCH MANPOWER



with

ELECTROLIFT

worm drive hoist

Just one man can lift and move those heavy loads around your plant, with ElectroLift.

Safe, compact, smooth, quiet, fast . . . with a choice of many models for any use. Capacities up to 6 tons. Optional pushbutton control gives pin-point accuracy.

For further features, consult your ElectroLift representative in telephone directory.

ELECTROLIFT

ELECTROLIFT, INC., 30 CHURCH ST., NEW YORK 7, N. Y.

If you write maker identify as IEN - 837

COMPARE THE RESULTS you can get from these FREE samples of amazing DRIPRINT paper!

Write on your company letterhead for stock samples, sent without obligation.

DIETZGEN

DRIPRINT

TRADE MARK

Better, ready-to-use direct positive prints are yours in seconds with DRIPRINT

Whether you want prints with black, blue, red or sepia lines, you'll get better results with DRIPRINT. Made directly from your translucent original without a negative, these superior Dietzgen ammonia-process prints on paper or cloth give you denser, sharper lines on pure white backgrounds every time.

Lines are fade-proof, too, even in strong sunlight, oil, perspiration. And these prints are tough, fight repeated folding, wear, tear. Thus DRIPRINT is permanent two ways.

You can draw or write on DRIPRINT with pen, pencil or water color; and print lines can be removed instantly with DRIPRINT Eradicator Fluid. So notations, additions, alterations are easily made. Try DRIPRINT.

EUGENE DIETZGEN CO. • Chicago • New York • San Francisco
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Washington • Milwaukee • *Dealers in All Principal Cities*

DIETZGEN

EVERYTHING FOR DRAFTING SURVEYING & PRINTMAKING

Free Samples!

If you write maker identify as IEN - 839

VALVE . . Hydraulic relief design, three ranges between 100 and 2,500 lb.

Source: GRE-SEN MFG. CO.
622 Colfax Ave. N., Minneapolis 11, Minn.

List price is $12

Cast iron body is fitted with a hardened steel spring backed plunger and seat in this new Model-DR valve. It is threaded to apply in a ¾-in. pressure line and to connect to a ½-in. return line. The operating spring is interchangeable in the body for three ranges minimum at 100 to 500 lb., maximum at 1,250 to 2,500 pounds.

The valve permits free flow in either direction. It opens to return when pressure exceeds the set amount. Face to face dimension is 3⅜ inches. Overall height is maximum at 6½ in. on minimum setting. The relief port will handle 15 gpm.

If you write maker identify as IEN - 840

INSULATING . . Vermiculite brick to back up fire brick in a furnace

Source: ZONOLITE CO.
133-37 S. LaSalle St., Chicago 3, Ill.

Can be sawed and fitted

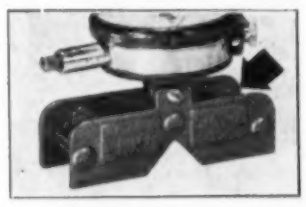
Vermiculite, the micaceous mineral produced by the company, is employed with clay binders in manufacture of a new insulating brick that can be applied in furnace construction in temperature to 1,800 deg. F. The brick can be used for facing purposes when temperature does not exceed this figure. They are designed primarily, however, as back-up insulation for refractory brick. Production is in a standard 9-in. series with packaging in cartons of 25. They can be laid up with any good refractory mortar.

Density is 35 lb. per cubic foot. Weight is 2.1 pounds. Thermal conductivity is 1.25 at 700 deg. F. Cold crushing strength is 185 lb. per square inch. Linear shrinkage is 2 per cent after reheating to 1,800 deg. F.

If you write maker identify as IEN - 841

MAGNET . . Permanent magnet mounts dial indicator for base lathe stop

Source: CULLEN MFG. CO.
1316-20 Clark St., Racine, Wis.



No. 300 about $3

Model 300 is a new unit in the company's line of permanent magnet bases, previously described IEN-3020-52. The new design takes a dial indicator to 3 in. in diameter for application on the bed of a lathe to serve as a stop for the feed movements. The base and indicator apply on milling machines, grinders. A companion design, No. 350, provides fine adjustment to bring the indicator into "zero" contact to start an operation. Both units provide 50-lb. holding effort and measure 3½ by 1⅛ by 1 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 842

Streamlined-

AIN'T SHE?

. . . but rugged, very rugged . . . and she can be driven with a Motor, Turbine or V-Belt! Efficient, versatile and the price is lower than you would expect for a quality product of this kind.

WRITE FOR BULLETIN 242 TODAY

IEN-5

SIZES: 1", 1½", 2", 3"
CAPACITIES: 5 to 450 G. P. M.
HEADS: 15 to 500 feet
MOTORS: 1750 and 3500 RPM, ¼ to 40 horsepower
MATERIALS: Standard, All Iron, All Bronze, or special to meet unusual requirements

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC.
66 Bridges Avenue Warren, Massachusetts

If you write maker identify as IEN - 843

M&M

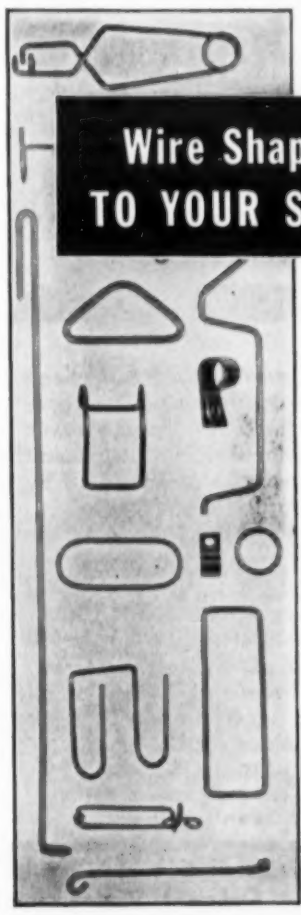
GIANT KEYSEATERS

M & M Giant Keyseaters, built in a wide range of sizes, speedily and accurately cut internal keyways or splines in the bores of pulleys, gears, fly wheels or any other machine part. Special fixtures and cutters are available for unusual shaped keyways and taper work. Send us your problems today.

MITTS & MERRILL 68

1014 South Water • SAGINAW, MICH.

If you write maker identify as IEN - 844



Wire Shapes and Forms TO YOUR SPECIFICATIONS

● Your wire forms are produced fast, accurately and at low cost with Sommer mass-production methods.

Speedy, automatic plating equipment handles either large or small assemblies. Popular new Zinc Iridite process adds a bright, durable, economical finish.

Sommer offers complete forming, stamping, cut-threading and butt-welding services. Let us work with you in designing and producing any wire shapes or forms needed for your defense contracts. Send sample, blueprint or drawing—see how Sommer can save you time and money.

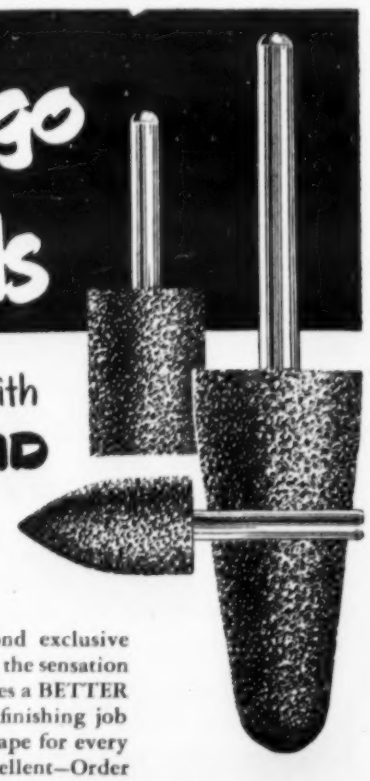
SOMMER METALCRAFT CORPORATION
300 POSTON DRIVE
CRAWFORDSVILLE, INDIANA

If you write maker identify as IEN - 845

Chicago MOUNTED Wheels

. . . now even better with

79E BOND



Buy Chicago Mounted Wheels—bonded with 79E Bond—and you'll never use any other!

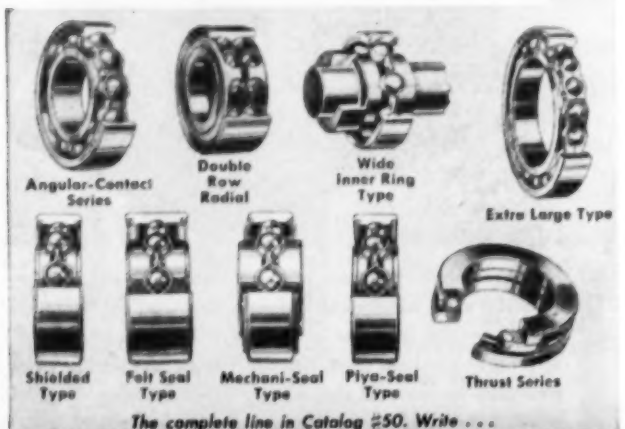
79E—a tough new bond exclusive with Chicago Wheel—is the sensation of the industry . . . it does a BETTER grinding, burring, and finishing job FASTER. A size and shape for every use. Deliveries are excellent—Order today.

CHICAGO WHEEL & *Mfg.* Co.
Dept. N • 1101 West Monroe Street, Chicago 7

If you write maker identify as IEN - 846

FAFNIR BALL BEARINGS

THE MOST COMPLETE LINE IN AMERICA



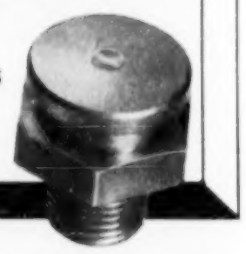
The complete line in Catalog #50. Write . . .

THE FAFNIR BEARING COMPANY
New Britain, Connecticut

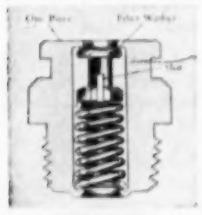
If you write maker identify as IEN - 847

A NEW UNIVERSAL DEVELOPMENT

Giant Buttonhead Grease Fittings with One-Piece Construction!



To solve a problem, Universal Giant Buttonhead Fittings bring a design new to the field. Their one-piece construction prevents the leaking possible with conventional two-piece buttonhead fittings which can be separated by extreme pressure or jolting.



CROSS SECTION

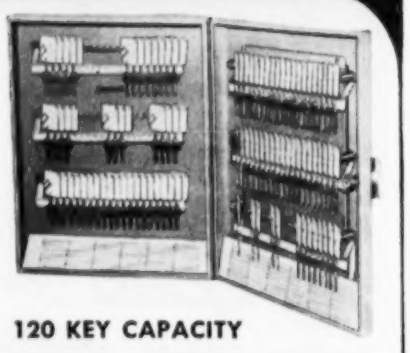
Universal Giant Buttonhead Fittings are stronger, longer-wearing, abuse-resisting. A rugged steel inner-spring combines with a fiber sealing washer to prevent grease leak-back. *Check your machinery.* Wherever a conventional two-piece grease or oil fitting is vulnerable to being knocked apart by a jolt or high pressure, that's the place for Universal.

Discover more about these revolutionary new one-piece giant buttonhead fittings. They come in all regular sizes. Write now for complete information.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue • Oakmont, Pennsylvania

If you write maker identify as IEN - 848

STOP HUNTING FOR KEYS



120 KEY CAPACITY

Here's real "key insurance" in a compact KE-CABINET. Made of 20 gauge cold rolled steel with suitable hardware to provide maximum key security. Equipped with numbered KE-TAGS of durable, vulcanized fibre. KE-CABINETS come in two sizes to hold 60 to 120 keys and 100 to 200 keys. The cabinet is finished in modern office grey.

For further information write
CUSHMAN & DENISON MFG. CO.
153 West 23rd St. • New York 11, N. Y.

KE-CABINET

NEW LITERATURE—*Concluded*

Identify as IEN - 059

STEEL BARS . . Condensed quick-reference list of hot-rolled and cold-finished carbon and alloy-steel bars points out characteristics, mechanical properties and uses to assist your selection. Ask for "Guide to Steel Selection," 4 pages. Joseph T. Ryerson & Son, Box 8000-AA, Chicago 80, Ill.

Identify as IEN - 060

STEEL TUBES . . Useful conversion equivalents and formulae dealing with applications of steel tubes are given in 6-page Bulletin 10 along with mill practices, physical properties of cold drawn seamless steel tube. Pacific Tube Co., 5735 Smithway St., Los Angeles 22, Calif.

Identify as IEN - 061

TEST CHAMBERS . . That test product performance under simulated conditions from minus 100 to plus 200 deg. F. and relative humidity from 20 to 95 per cent in eight standard models. Bulletin TR, 4 pages. Tenney Engineering, Inc., 24-28 Avenue B, Newark 5, N. J.

Identify as IEN - 062

TEST RADIOISOTOPES . . Free 212-page catalog, "Radioelements and Accessories," describes radioactive materials available for research along with list prices, properties, suggestions on handling and shipping, accessory equipment. Atomic Energy of Canada Ltd., Box 93-A, Ottawa, Canada.

Identify as IEN - 063

VALVES . . For 100-lb. service including globe, angle, boiler drain, radiator types in iron pipe and copper-to-copper designs, also brass boiler couplings, ground joint waste connections, tabulated by size and shipping weight. Catalog 752, 8 pages. Tanner Mfg. Co., 12 Lawrence Park, Erie, Pa.

Identify as IEN - 064

VENTILATING FANS . . Examples to assist you in selection of exhaust fans for general ventilation and paint spray booths are given in 12-page Catalog F-52. Performance ratings are set up in tabular form on 12 to 48-in. units. M & E Mfg. Co., 2577 Winthrop Ave., Indianapolis 5, Ind.

Identify as IEN - 065

WEIGHING . . Ideas on how to use scales for weighing, recording, controlling, classifying, balancing, counting, testing, batching, force measuring, presented by application pictures of many models available. Folder 2020-E, 16 pages. Toledo Scale Co., 10 Telegraph Road, Toledo 1, Ohio.

Identify as IEN - 066

WEIGHING . . Torsion bands instead of knife-edge fulcrums are employed in the company's laboratory balances. Diagrams in new 9-sheet loose-leaf catalog show how they work together with models, list prices and sets of weights. Torsion Balance Co., Colfax & Monehegan Sts., Clifton, N. J.

Identify as IEN - 067

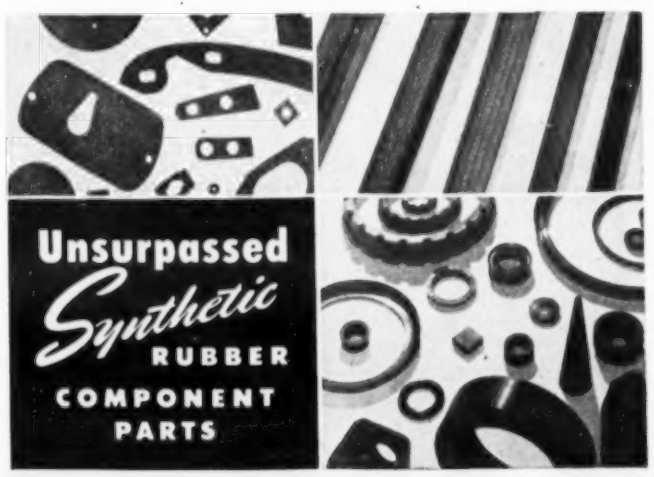
WELDING ELECTRODES . . Low-hydrogen type welds "difficult" steels readily with little or no preheat; this and other advantages are described in new Bulletin 5-26 along with a chart of deposition efficiency. Harnischfeger Corp., 4402 W. National Ave., Milwaukee, Wis.

Identify as IEN - 068

WHEELS . . Revised 60-page Catalog 153 covers pneumatic and rubber-tire wheels, casters, hand trucks, trolley wheels, overhead conveyors, conveyor rolls, belt idlers. Saginaw Products Corp., 66-70 Williamson Rd., Saginaw, Mich.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 849



Users of Acadia Synthetic Rubber component parts in hundreds of industries have found them unsurpassed. No matter what function synthetic rubber must perform, depend on Acadia parts. They best meet exacting specifications and operating conditions such as mositure, oil, heat, wear and age resistance. Molded, extruded, die-cut to close limits—compounded to meet specific conditions. Acadia engineers will gladly cooperate.

- Seals
- Gaskets
- Washers
- Cups
- Channel
- Strip
- "O" Rings
- Sheet
- Tubing
- Roll Goods
- Cut Parts
- Lathe Cut Washers

Sheet and Roll Felt Manufactured for Special Purposes and To Meet All S.A.E. and Military Specifications.

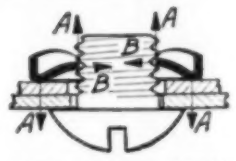
ACADIA Synthetic PRODUCTS
Processors of Synthetic Rubber and Plastics • Sheets • Extrusions • Molded Parts
DIVISION WESTERN FELT WORKS
4035-4117 OGDEN AVENUE • CHICAGO 23, ILLINOIS

If you write maker identify as IEN - 850

PALNUT Trademark
LOCK NUTS
for quick, secure fastening at low cost

—and they STAY TIGHT!

Millions of light sheet metal and parts assemblies are securely fastened with low-cost, fast-assembling PALNUT Lock Nuts. Wherever you have a nut-and-screw assembly, find out how PALNUTS can save you money and keep your products tight in service. Many sizes, types and finishes for every need.



DOUBLE LOCKING ACTION
When the PALNUT is tightened, spring tension (A-A) is exerted upward on the screw thread and downward on the part, while arched, slotted jaws grip the screw like a chuck.

Free samples and catalog
Send details of assembly, screw threads, etc. for samples and latest catalog.

THE PALNUT CO.
59 Cordier St., Irvington 11, N. J.
In Canada: P. L. Robertson Mfg. Co., Ltd., Milton, Ont.

If you write maker identify as IEN - 851

Variac® Motor Speedcontrols
for Continuous Control of D-C *Motors from* A-C *Lines*

FAST
Start
Stop
Reverse

4 Models
1/15 to 3/4 hp.

Good Speed Regulation
Smooth Operation—*practically no torque pulsation*
Wide Speed Range—*over 15 to 1*
Quick Warm Up—*selenium rectifiers, no electron tubes*
Dynamic Braking—*quick stopping*
Compact Unit Construction—*assures simple installation and easy maintenance*

Write For Variac Motor Speed Control Bulletin

GENERAL RADIO Company
275 Massachusetts Avenue, Cambridge 39, Massachusetts, U. S. A.
90 West Street NEW YORK 6 • 920 S. Michigan Ave. CHICAGO 5 • 1000 N. Seward St. LOS ANGELES 38

If you write maker identify as IEN - 852

Specify WEIGER-WEED for sound, clean welds!

(Shown above) Weiger-Weed Cold Formed Offset Tip, Type D

WW®
Standard Replaceable Cold Formed Offset
WELDING TIPS

Through the development of special cold forming equipment and methods, Weiger-Weed produces offset welding electrodes with these important advantages: . . .

- No loss of physical or electrical properties—cold formed offset tips have the same hardness and conductivity as straight tips.
- No distortion of taper—good electrical contact, no water leaks.
- Full cooling—water hole is as deep as in straight tips.
- Full workable nose length.
- Economy, quick delivery—most styles are formed quickly from standard straight tips.

Many other special cold formed electrodes to lick difficult clearance problems can be worked out by WW if quantities warrant the tooling. Give us the details of your problem.

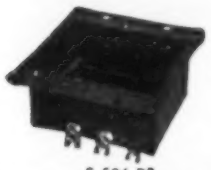
22801-D

WEIGER-WEED
Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Avenue, Detroit 4, Michigan

If you write maker identify as IEN - 853

For HEAVY DUTY WORK! Severest Electrical Services

P-506-CE—Plug with Cap



S-506-DB
Socket with deep Bracket

JONES PLUGS & SOCKETS

500 SERIES
Proven Quality!

For 5,000 Volts, 25 Amperes per Contact Alterable by circuit Characteristics.

Socket contacts of phosphor bronze, knife-switch type, cadmium plated. Plug contacts hard brass, cadmium plated. Made in 2, 4, 6, 8, 10, and 12 contacts. Plugs and sockets polarized. Long leakage path from terminal, and terminal to ground. Caps and brackets, steel parkerized (*rust-proofed*). Plug and socket blocks interchangeable in caps and brackets. Terminal connections most accessible. Cap insulated with canvas bakelite.

Write for Jones BULLETIN 500 for full details on line.

Send for complete data on this new basic improvement!

Jones — HOWARD B. JONES DIVISION
CINCH MANUFACTURING CORPORATION
CHICAGO 24, ILLINOIS
SUBSIDIARY OF UNITED-CARR FASTENER CORP.

If you write maker identify as IEN - 854

- [ ] Pressure
- [x] Maintenance
- [ ] Acids
- [ ] Alkalis
- [ ] Complicated inventory
- [ ] Temperature
- [ ] Petroleum products
- [ ] Food products

If it's maintenance

use R/M Vee-Flex®... the packing that provides better sealing with fewer gland adjustments

The unique design of the R/M Vee-Flex Packing Ring provides automatic sealing without constant gland adjustment. The hydraulic principles of this design have been demonstrated by photoelastic stress analyses and radial pressure tests. R/M Vee-Flex Rings are available for all sizes of rods and rams, and for pressures of 6000 psi and higher. Special types are available for use with foods and petroleum products.

Whatever your packing problem, the authorized R/M distributor near you has a packing engineered to your needs and your budget. Call him today or write us for the R/M Packing Catalog.

R/M

IT'S PACKED WITH SATISFACTION WHEN IT'S PACKED WITH R/M

PACKINGS

RAYBESTOS-MANHATTAN, INC.
PACKING DIVISION, MANHEIM, PA.

FACTORIES: Bridgeport, Conn.; Manheim, Pa.; No. Charleston, S.C.; Passaic, N.J.; Crawfordsville, Ind.; Peterborough, Ontario, Canada

RAYBESTOS-MANHATTAN, INC., Manufacturers of Packings • Asbestos Textiles • Teflon Products • Industrial Rubber Products • Abrasive and Diamond Wheels • Rubber Covered Equipment • Brake Linings • Brake Blocks • Clutch Facings • Fan Belts • Radiator Hose • Sintered Metal Products • Bowling Balls

If you write maker identify as IEN - 856

CONVEYING . . Turn table section forms strapping station in roller line

Source: SAMUEL OLSON MFG. CO.
2420-22 Bloomingdale Ave., Chicago 47, Ill.

Channels clear straps

Boxes and bales, moving along a roller line, come into position on this new turn table section for application of straps. When the operation has been completed the sealed containers can be directed to various take-off lines by turning the table top. The company is prepared to supply the assembly for specified size and load.

If you write maker identify as IEN - 857

VALVE . . Solenoid operated, two and three way for air to 150 pounds

Source: MECHANICAL AIR CONTROLS INC.
15309 W. 11-Mile Road, Detroit 37, Mich.

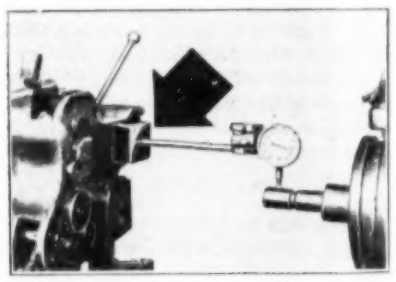
For steady duty

Series 3500 is a new line of pneumatic solenoid operated valves with ¼-in. pipe connections and $\frac{3}{16}$-in. orifice. The valve is made in 2 and 3-way designs either normally opened or normally closed. Operation is by direct solenoid action. Reversal is by a spring. Standard solenoid construction is for connection to a 110-volt 60-cycle ac. line. Recommended working pressure is from 20 to 150 pounds. The operating parts are accessible following removal of two screws.

If you write maker identify as IEN - 858

MAGNET . . Permanent magnet base and arm to position gage on a machine

Source: MAIN ELECTRIC CO.
1460-64 E. Main St., Rochester 2, N. Y.

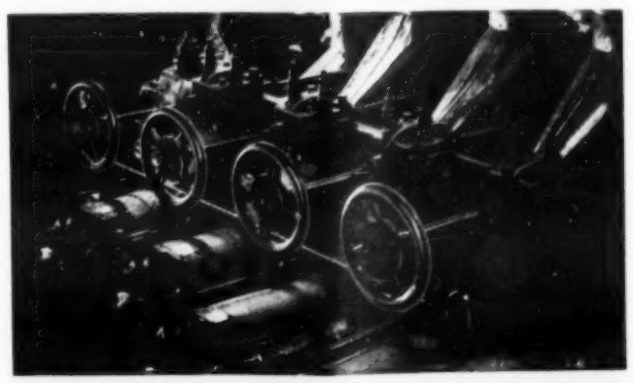


Non-magnetic arm

Rectangular base, measuring 2 by 1¼ by 2¼ in., supports a brass rod and pivoted arm in this new magnetic base assembly to position gages of various types on a machine. The column measures about 7 in. in height above the base top and is $\frac{5}{16}$ in. in diameter. The arm, also measuring $\frac{5}{16}$ in., extends outward from the column in adjustable arrangement to take a gage.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 859



RAPID ASPHALT PAINT

PROTECTS AGAINST MOISTURE, ACIDS AND CORROSION

A quick-drying, glossy black coating. High insulating and moisture-proof qualities. A "must" for equipment that is constantly exposed to acid fumes or dampness. In six sizes from one pint cans to 55 gallon barrels. Applied by brush or spray—quickly dries to lacquer-like hardness. For metal, wood, masonry, coated fabrics, etc. For literature, write The Ruberoid Co., 500 Fifth Ave., New York 36, N.Y.

The RUBEROID Co.

ASPHALT AND ASBESTOS BUILDING MATERIALS

If you write maker identify as IEN - 860

Jacketed Pumps

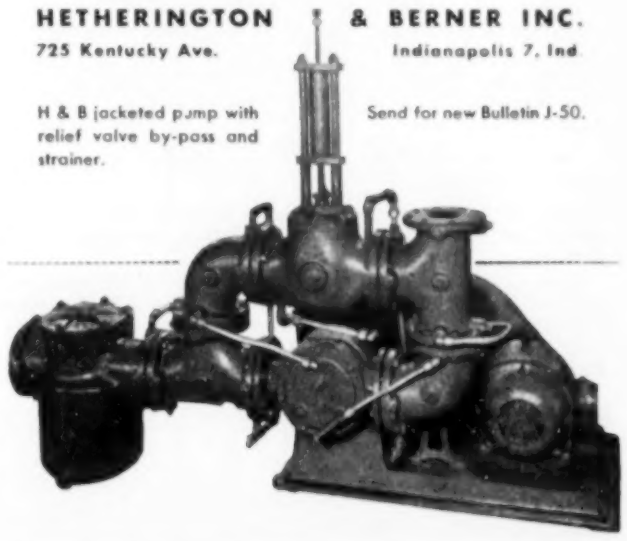
for handling viscous materials

Pumps for H & B Jacketed Systems are made especially for us to fit the flanges of H & B jacketed fittings. These pumps are engineered to provide maximum efficiency in handling viscous materials. H & B fittings are designed with a double wall forming an all-over jacket, completely insulating the interior line, with no dead spots or unprotected places.

HETHERINGTON & BERNER INC.
725 Kentucky Ave. Indianapolis 7, Ind.

H & B jacketed pump with relief valve by-pass and strainer.

Send for new Bulletin J-50.



If you write maker identify as IEN - 861

Masoneilan No. 11

Pressure Reducing Valve

Sets new standard for accurate regulation!

This better-than-ever Masoneilan No. 11 holds reduced steam pressure settings with complete accuracy and dependability. Superfinished integral pilot valve, housing, and main valve respond instantly to slightest variations in reduced pressure — prevent sticking and corrosion.

Easier to service, too, all parts may be removed and cleaned with the valve in the line. Maintenance consists of *little more than keeping the valve parts clean.*

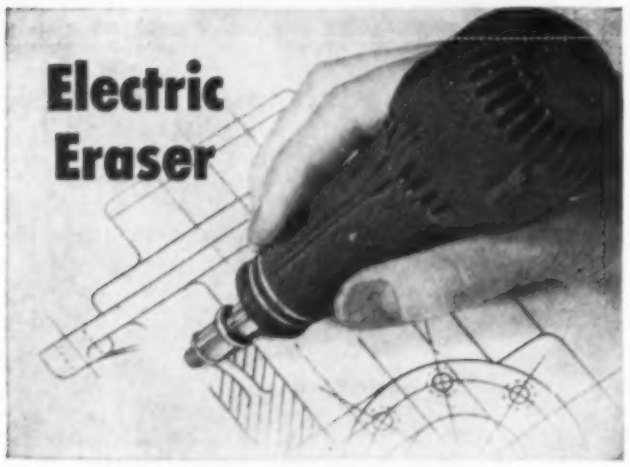
Initial pressures up to 250 lbs. reduced to any desired pressure between 10 and 90 lbs. or 75 and 225 lbs. Sizes ½" to 2" with bronze body. (Also available in iron and steel.)

Call your Mason-Neilan Industrial Distributor for fast, dependable service.

MASON-NEILAN REGULATOR CO.
1188 Adams Street, Boston 24, Mass.

If you write maker identify as IEN - 862

If you write maker identify as IEN - 863



saves time safely!

Only this Bruning machine saves drafting time and gives you a 7 in. eraser that can't fly out, causing ferrule to damage drawing.

Stays cool under continuous operation. Rubber-mounted, permanently oiled bearings assure quiet, smooth operation. Lightweight, long-wearing — just one moving part.

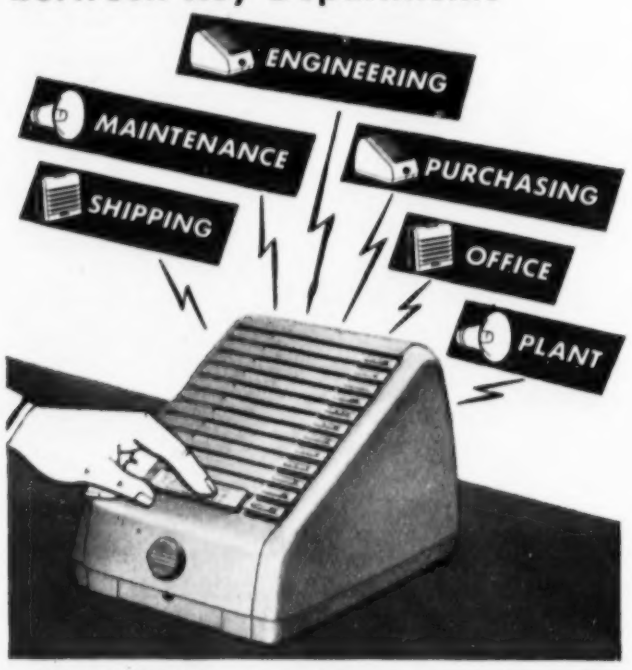
Write for free folder. CHARLES BRUNING COMPANY, Inc., Dept. B13, Teterboro, New Jersey.

BRUNING
Specialists in copying since 1897

If you write maker identify as IEN - 864

Step Up Production

with faster communication between Key Departments



EXECUTONE Intercom puts every department at your fingertips—*instantly!*

Production moves faster when you don't have to wait for information. With Executone you talk to any department, anywhere in your office or plant—*instantly!* No time lost running back and forth. No waiting on "busy" inside phones. You get more work done—*faster!*

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Without obligation, please send me full data on Executone Intercom. I am particularly interested in:

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☐ INTRA-PLANT COMMUNICATION ☐ INVENTORY CONTROL
☐ MATERIALS HANDLING CONTROL ☐ LOCATING PERSONNEL

Name..... Title.....
Firm.....
Address..... City.....

If you write maker identify as IEN - 866

HANDLING . . Magnesium ramp spans from ground to freight car door

Source: MAGNESIUM CO. OF AMERICA
5220-24 Indianapolis Blvd., East Chicago, Ind.

Makes loading dock unnecessary

Length is 30 ft. for this new Yard Ramp. Mounting is on two wheels at the center to move from one location to another. The ends bear on the ground and on a car floor when the ramp is in operating position, following use of a hydraulic mechanism at the car end.

Capacity ranges from 3 to 8 ton including the weight of a load carrying truck as well as the load. Width is 60 and 70 inches. Construction employs quarter round safety curbs on the two sides and bridge type underbracing.

If you write maker identify as IEN - 867

VALVE . . Diaphragm operated, two and three way miniature assemblies

Source: RESEARCH CONTROLS
P. O. Box 5035-A, Tulsa, Okla.

Height about 7 inches

The company has developed a new line of miniature diaphragm operated valves for ⅛, ¼ and ½-in. pipe lines with control pressure ranging from 2 to 15 pounds. The valves are particularly suited for pilot action in process installations. Each parallels the characteristics of performance, design and construction as well as interchangeability of larger similar units.

Type 75, with a steel or stainless steel forged body, is shown in the section illustration. The assembly can be supplied for air to close, air to open and for static or dual pressure loading with an adjustable spring. It employs Teflon packing and interchangeable trim as well as combinations of body, bonnet and operating assembly.

Identify as IEN - 868

Compressed air replaces springs as the means for cushioning suspension for a bus in a new design by General Motors Truck and Coach Division. The air is contained in two chambers and two integral sets of rubber bellows. The air compressor on the bus supplies the pressure. Controls change pressure as the load changes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 869

BIN STUCK LATELY?

Loosen it Up—with a CLEVELAND AIR Vibrator
Literature on Request

THE CLEVELAND VIBRATOR CO.
2736 Clinton Avenue • Cleveland 13, Ohio

If you write maker identify as IEN - 870

2500 P.S.I. THREE SERIES OF **30" VAC.**

MERCOID DA PRESSURE CONTROLS

PROVIDE THE SENSITIVITY YOUR APPLICATION REQUIRES

- FULLY ADJUSTABLE AS TO RANGE AND SENSITIVITY
- BOURDON TUBE OPERATED
- VISIBLE CALIBRATED DIAL
- MERCOID SEALED MERCURY CONTACT

There is a Mercoid DA Pressure Control for your particular application in pressures varying from 30" vacuum to 2,500 p.s.i. (available in many different circuit arrangements).

Apart from bourdon tube operated pressure controls, Mercoid offers a line of bellows and diaphragm actuated controls.

Explosion-proof and weather-proof cases are adaptable to practically all series.

If you have an automatic control problem involving the control of pressure, temperature, liquid level or mechanical movement, write for Catalog No. 700A.

THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO, ILL
NEW YORK: 205 E. 42nd ST. • PHILADELPHIA: 3137 N. BROAD ST

If you write maker identify as IEN - 871

ANDREX

THIS INDUSTRIAL X-RAY UNIT IS REALLY PORTABLE

★ Now available in capacities of 175 kVp and 120 kVp, as shown. Available soon, 250 kVp. ★

No high tension cables, cooling connections or separate transformers . . . Andrex is independent of all but a simple power supply. This, together with Andrex's small size and light weight enable it to be carried by one man into working spaces which are either inaccessible with other units, or entered with the greatest difficulty. That's what Andrex means by **real** portability.

Entire unit fits easily into the trunk of a car.

Not many spaces are too small to get into with an Andrex.

There's real economy in an Andrex unit, too. By combining x-ray tube and other high tension parts in a single all-welded steel tank, maintenance and repair costs are greatly reduced. And as to efficiency in operation . . . field reports show that in erection work Andrex gives 2 to 3 times the number of radiographs per working day than conventional equipment.

Widely used in Europe, the Andrex unit is backed by 24 years of practical experience in the manufacture of x-ray equipment.

Write for detailed, illustrated bulletin.

SOLE DISTRIBUTORS
HOLGER ANDREASEN, Inc.
703 MARKET ST. SAN FRANCISCO, CALIF.

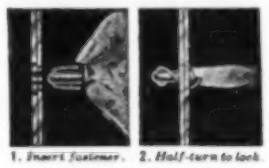
If you write maker identify as IEN - 873

This fastener works through thick and thin!

Spring-Lock works whether panel thicknesses run over or under specifications! Spring wire deflects automatically to handle greater or lesser thicknesses. Spring-Lock's design flexibility makes it more than a fastener: it can be adapted as a shelf support, door strike, knob or any similar panel-mounted device. Many standard shapes and sizes of Simmons Spring-Locks are available from stock.

SIMMONS FASTENER CORPORATION
1758 North Broadway, Albany 1, N. Y.
Spring-Lock • Quick-Lock • Roto-Lock

HERE'S HOW SPRING-LOCK WORKS

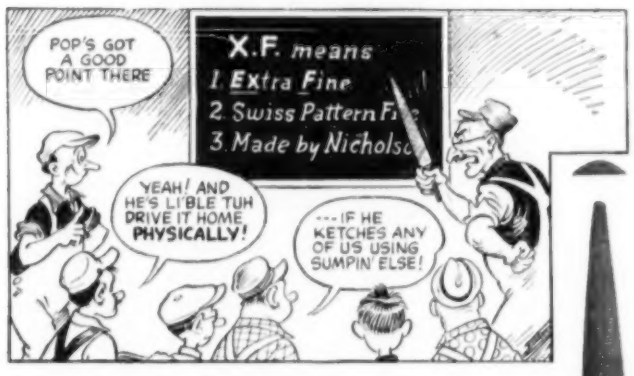


1. Insert fastener. 2. Half-turn to lock.

- **Installation is BLIND**
- **Installation is EASY: no special tools are needed**
- **Installation is QUICK: a half-turn locks it in place**
- **Installation is SECURE: the *spring* steel *locks* the fastener, resists vibration**

Send for details and samples, or write us about *your* fastening problem.

If you write maker identify as IEN - 874



They can't put anything over on Pop. He knows (as most good foremen know) that where there's precision filing to be done, there are specially precise files for doing it, viz.: Nicholson X.F. Swiss Pattern Files. He knows, too, that "X.F." means "*Extra Fine*." And for good reason: With 89 years' file-making experience and more Swiss Pattern production than any other manufacturer in America, Nicholson can well be expected to turn out the absolute tops in quality.

SOLD THROUGH INDUSTRIAL DISTRIBUTORS
in all popular individual types; and in such special groups as Die Sinkers Files, Round and Square Handle Needle Files, Filing Machine Files; Silversmiths and Die Sinkers Rifflers. Free Catalog.

NICHOLSON FILE CO., 33 ACORN ST., PROVIDENCE 1, R. I.
(In Canada, Port Hope, Ont.)

NICHOLSON U.S.A. TRADE X.F. MARK
. . . a file for every purpose

If you write maker identify as IEN - 875

ONE MAN AND A Lincoln AUTO-SCRUBBER
CLEANS MORE FLOOR SPACE THAN AN ENTIRE CREW OF SCRUBBERS AND MOPPERS!

Above: floor cleaning at well known manufacturer of office appliances with a Lincoln 500 AUTO SCRUBBER that cleans floors better in one-tenth the time at one-fourth the previous cost. Write DEPT. 1-53 for details.

$AVE UP TO 75% ON FLOOR SCRUBBING!

★ Without cost or any obligation whatever, our local floor maintenance specialist in your territory will survey your present methods and submit specific recommendations to insure substantial savings.

There is a recommended LINCOLN for every floor cleaning operation. Ask for a FREE Demonstration

The LINCOLN FLOOR SCRUBBER AND POLISHER

Lincoln-Schlueter FLOOR MACHINERY COMPANY
1258 WEST VAN BUREN ST., CHICAGO 7, ILLINOIS
MORE THAN 55 YEARS OF SERVICE

World's Manufacturer of the Most Complete Line of Floor Maintenance Equipment

If you write maker identify as IEN - 876

SIGNALING . . Liquid colorimeter indicates deviation from preset color

Source: HALLIKAINEN INSTRUMENTS
1339-43 7th St., Berkeley, Calif.

Model 1015A

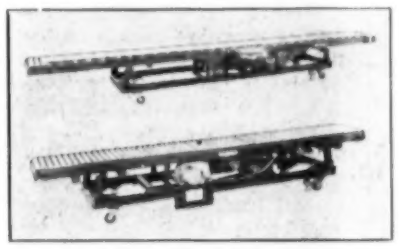
New **Color Alarm** is a differential type continuous flow color indicator. It controls circuits to a pair of signal lamps, one of which indicates that a liquid color is running lighter than that for which the meter was set. The other indicates that it is darker. Application is in a flow line to pass a sample continuously through a cell within the housing. The indication is stable to about 0.1 of a Union color number when employed on kerosene under usual line voltage fluctuations. The instrument has been used in the petroleum field for control of kerosene color. It can be adapted to record and control.

A panel lamp in the housing provides a source of light that traverses the sample cell and is reflected by a mirror to again traverse the cell and act upon a small phototube. A second phototube receives light from the same source directly and is used as a reference. This second tube is covered by a cylindrical shield carrying a wedge shaped opening. It can be positioned by turning a dial on the face of the housing so the bridge circuit, for color of the material in the cell, will be balanced. A darker liquid flowing through the cell will then unbalance the circuit causing a relay to operate the indicating lamp circuits to close one and open the other.

If you write maker identify as IEN - 877

CONVEYING . . Portable belt unit and live roller assembly, to 25 feet

Source: STANDARD CONVEYOR CO.
64 Indiana Ave., North St. Paul 9, Minn.



For loading, unloading

New assemblies of caster mounted motor driven belt and live rollers have been added the company's line of conveying equipment to handle miscellaneous commodities in loading and unloading operations. Both are adjustable vertically on their caster mounted bases and can be secured by floor locks also on the bases.

The belt assembly is available to suit given requirements in a recommended length range between 10 and 25 feet. Width can be specified between 12 and 36 in. measured over the belt. The carrying surface is above the side frames to ride a commodity that is wider than the conveyor itself. A continuous conveyor can be made by coupling two or more of the individual motor driven units end to end.

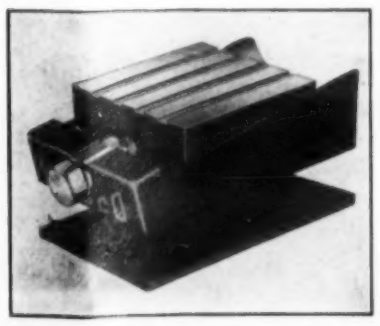
The roller assembly rides its rollers on a motor driven belt. The motor and transmission provide variable speed in forward or reverse direction. This assembly can be coupled to a portable belt or to another portable live roller. One or more can be spaced between a series of portable belt units.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 878

A PAID NEWS ADVERTISEMENT BY ENTERPRISE MACHINE PARTS CORP.

Improved Machine Leveling Jack is 50% stronger yet lower in height



Engineering improvements have made this Jack 50% stronger yet lower in height. This was accomplished by redesigning the Empco Jack so that the adjusting screw always remains cradled in the assembly. This insures full bearing of either front or back collar at any stage of operation.

Once the machine is set on Empco Jacks, the simple turning of adjusting screw with a hand wrench will lower or raise the machine until your level indicator reads "zero." With this feature, periodic machine leveling can be done in a matter of minutes.

To reduce vibration, Vi-Sorb Mounting Pads are available with each style Empco Jack. These pads substantially reduce vibration, the percentage of reduction usually depends upon the thickness of the pad that is used.

Level machine installations with periodical re-leveling is essential to lower costs of machine maintenance. These costs are further reduced by the use of Vi-Sorb Mounting pads under every Empco Leveling Jack.

Available in three styles: JC-1 (standard) and JC-2 (heavy duty) pictured here, and the newest style JS particularly designed for use with anchor bolts. Many models in all styles with minimum height ranging from 1⅞" to 4".

For complete specifications and prices write the Enterprise Machine Parts Corporation, 2737 Jerome Ave., Detroit 12, Michigan.

If you write maker identify as IEN - 879

60-DAY FREE TRIAL

of America's most popular industrial stool

A tired worker costs MUCH more than a good chair

- 4-way adjustable backrest
- Scroll shaped posture seat
- Tamper-proof tubular all-welded construction
- 3 adjustable height ranges.

Now test Royal's famous No. 515 stool in your own plant without cost or obligation. See why the country's top firms choose it for superior versatility and durability. Write for free trial stool today!

metal furniture since '97 Royal

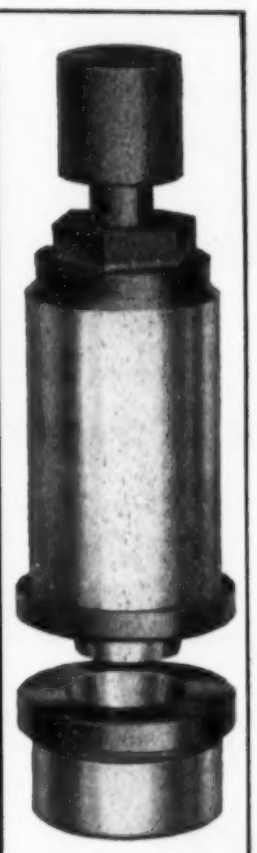
ROYAL METAL MANUFACTURING CO.
175 North Michigan Avenue, Dept. 201, Chicago 1

If you write maker identify as IEN - 880

STANDARDIZED UNIVERSAL INDEX PLUNGERS

save time, save money

Save the time and expense of designing and machining special plungers for multi-station tools with Universal Index Plungers. They greatly simplify jig and fixture manufacture because plunger body and bushing have same diameter—all holes can be bored with same tool, often in same setting. Soft pin knob, hardened and ground locating bushing, plunger and plunger bushing. Straight and Taper Plungers in standard sizes, complete, ready for installation at approximately ¼ the cost of specially made plungers.



UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

169-A

If you write maker identify as IEN - 881

POWERS

No. 11 Self-Acting TEMPERATURE INDICATING REGULATOR
← Other dials available

SAVES LABOR—Stops Losses caused by over-heating

Automatically controls temperature of liquids or air at any point desired. Needs no compressed air or electricity for its operation.

3 Plus Values give you more for your money: 1) Easy to read 4" dial thermometer shows temperature of liquid or air being controlled, makes it easy to adjust regulator for proper temperature. 2) Has valve stem lubricator. 3) OVER-heat protection.

Powers No. 11 Regulators are available also without dial thermometer in a variety of 60° F. ranges and valve bodies ¼" thru 8". (110)

ECONOMICAL • DEPENDABLE • SIMPLE • EASY TO INSTALL

▶WRITE FOR BULLETIN 329 **• THE POWERS REGULATOR CO.**
3437 Oakton Street, Skokie, Illinois • Offices in over 50 Cities

If you write maker identify as IEN - 882

SINGLE-ACTING *Air-Clamp*

	STROKES	
Bore	Horizontal	Vertical
1"	1"	1"-2"
2¼"	1"-2"-3"	1"
3"		1"-2"
4"	2"-2½"	3"
5"	3"	3"
6"	3"	2"

*Pneumatic Cylinders

NEW CATALOG READY! Complete line of simple, adaptable, compact spring-return air cylinders. Cut costs and speed up production the modern, Air Power way. Write today.

MEAD SPECIALTIES COMPANY

4114 No. Knox Ave. Dept. EA-13, Chicago 41, Ill.

If you write maker identify as IEN - 883

READ AIR VELOCITIES *instantly... accurately... anywhere...*

...WITH THE

ALNOR VELOMETER

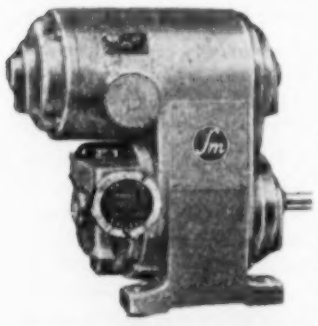
Alnor Velometer, a precision-built, self-contained, portable instrument, gives you instant, *accurate* readings of air velocities anywhere—in plants, mines, mills or laboratories. Measures speed of air flow through ducts, grilles, furnaces, spray booths or in the open. This rugged instrument needs no special care or delicate handling—anyone can use it and get accurate readings. Needs no calculations or reference charts. Available in a wide variety of scale ranges, and with a full assortment of jets and fittings for every application. You'll want full details and prices, so write for Bulletin 2448-G, Illinois Testing Laboratories, Inc., Room 517, 420 No. La Salle St., Chicago 10, Ill.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

If you write maker identify as IEN - 884

PRODUCTION UP 300% POWER COST DOWN

Through modernization of equipment with Speed-Trol, one machine now does the work previously requiring several machines. Power consumption and maintenance have been reduced, production has been increased 300% and less installation space is required, reports Raymond P. Shelter of Dugan Brothers of New Jersey, Inc., bakers of over one hundred and seventy-five varieties of pure foods.



STERLING SPEED-TROL GIVES YOU VARIABLE SPEED CONTROL NECESSARY FOR:

Equipment adaptation to: Sequence synchronization—operators' abilities—load variations due to differences in quantity, quality, weight, size, tension, hardness or shape of material to be processed, machined, conveyed, blended, mixed, etc.

Process control of: Temperature—viscosity—level—pressure—flow—etc.

Time control of: Baking—drying—heating—cooking—pasteurizing—soaking—chemical action—etc.

With Speed-Trol you get the maximum in production, plant efficiency, quality and profit.

20-page illustrated catalog... Sterling Speed-Trol, Slo-Speed, Klosd and Klosd-Tite Electric Power Drives. Write for catalog No. A-422.

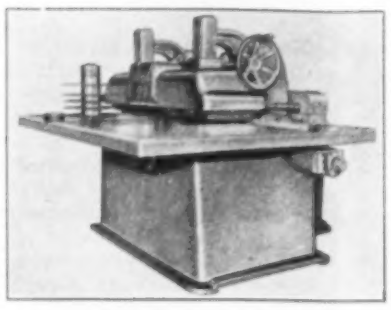
STERLING ELECTRIC MOTORS

Plants: New York City 51; Van Wert, Ohio; Los Angeles 22; Hamilton, Canada; Santiago, Chile. • Offices and distributors in all principal cities

If you write maker identify as IEN - 885

WOODWORKING . . Rip saw machine mounts multiple carbide tooth blades

Source: C. M. DIEHL MACHINE WORKS INC.
1117-21 Collins Ave., Wabash, Ind.



Work height to 3¼ inches

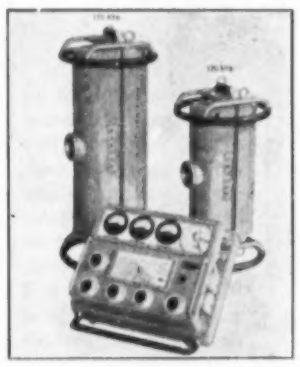
Multi-Rip No. 99 is a new sawing machine in which the arbor mounting, table and frame constitute one integral assembly for rigid precise operation. No adjustments are provided on the table or the arbor. The direct connected 30 to 60-hp. motor mounts on a pedestal at the rear. The circular saw blades assemble on a sleeve for quick change-over. The sleeve can be removed from the machine after loosening three nuts. Total work width is 12½ inches. Standard sets of spacers include units measuring 1/16 to 2½ in. in width.

Work is fed through by eight power driven rolls with V-belt and chain connection to a 2-hp. four-speed motor. Two feed ranges provide speeds from 50 to 150 fpm. and from 60 to 180 fpm. The eight rolls are mounted above and below the work and in front of and back of the saw arbor. The upper rolls can be compressed 1 in. without damage to the machine. The pressure bar carrying the upper rolls can be raised or lowered for varying stock thickness. The machine takes carbide tooth saw blades from 10 to 14 in. in diameter. Overall dimensions are 82 by 80 by 58 inches.

If you write maker identify as IEN - 886

TESTING . . Portable X-ray equipment, two sizes rate 7/8 and 2 in. in steel

Source: HOLGER ANDREASEN INC.
701-5 Market St., San Francisco 3, Calif.



Made in Denmark

Andrex trade names a recently improved design of the portable X-ray equipment originally developed in Denmark. It now is available through the company in the United States. A complete service and parts division is maintained also. The unit can be carried to a job and set up with connection to ac. power input at 110 to 440 volts. The larger unit can be entered through a 12-in. opening and weighs 180 pounds. The small one weighs 130 pounds. Control centers in a separate housing that weighs 90 pounds.

Insulated hand wheels at the two ends provide rolling support and also act as stands on which the unit can be set up. Photographs are made through an opening in the side. An exposure interval of 2 to 4 min., with the larger of the two units, will penetrate 2 in. of steel.

The main housing encloses the X-ray tube, a high voltage transformer, filament transformer and cooling pump. The separate control mounts the instruments, regulating devices, exposure timer and protective relays. Connections are water proof so the equipment can be used and left out of doors.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 887

SLASH YOUR COSTS OF THREADING PIPE!

OSTER

HIGH SPEED PIPE MACHINES

Reduce your costs of threading and cutting pipe with Oster "RAPIDUCTION" machines. Model No. 6-A covers the 1" to 6" pipe range and the 1" to 4" bolt range. Model No. 8 has a standard pipe range of 2½" to 8".

A single, quick-opening, adjustable die-head, with one set of holders, covers the entire range of each machine. Write for free catalog bulletin "LIST NO. 9-C" which explains Oster "RAPIDUCTION" features.

THE OSTER MFG. CO.
2053 EAST 61st STREET
CLEVELAND 3, OHIO

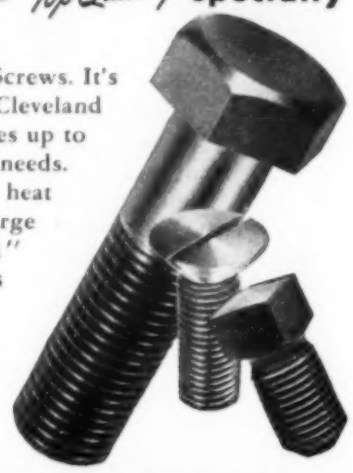
If you write maker identify as IEN - 888

BIG cap screws for big jobs

they're a CLEVELAND *Top Quality* specialty

Here's SIZE in Cap Screws. It's good to know that Cleveland can serve you on sizes up to 2½"—lengths to your needs. Hex Heads, bright or heat treated. Also extra large Flat Heads, up to 1" dia. Write for sizes and prices.

Cleveland extra-size cup point Set Screws up to 1½"x 10".



CLEVELAND *Top Quality* **FASTENERS**
The Cleveland Cap Screw Company
2917 East 79th Street Cleveland 4, Ohio
Warehouses: Chicago, Philadelphia, New York, Providence
ASK YOUR JOBBER FOR CLEVELAND FASTENERS

If you write maker identify as IEN - 889

SPARTAN TRUCKS

C-D-F MAKES THEM ALL... from DIAMOND FIBRE!

Tough, light C-D-F Fibre sides make SPARTAN trucks first with materials handling experts. *Fibre* resists moisture, oil and grease; stays smooth! SPARTAN trucks have heavy oak bottoms with iron kick-bands; your choice of modern casters; rust-resistant metal top rims and side bands. Nothing to catch, corrode, snag, splinter.

C-D-F also makes Fibre trays, tote boxes, cans, barrels. Low-cost receptacles for every industry. Write for complete Catalog R-52, call your C-D-F sales engineer (Textile mills: contact C-D-F Spartanburg, S. C.).

Continental-Diamond Fibre Company
NEWARK 21, DELAWARE

If you write maker identify as IEN - 890

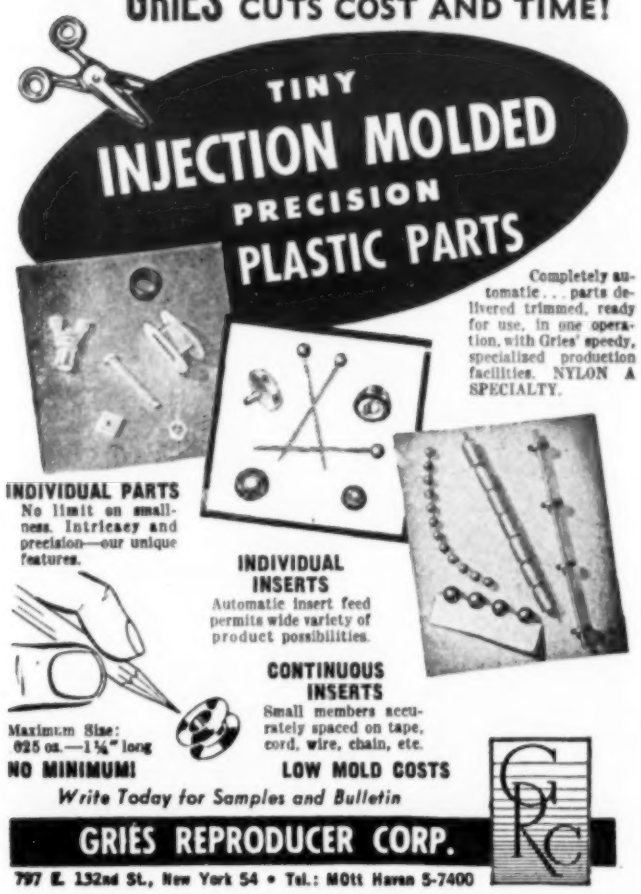
COST-CUTTING "STREAMLINER" CONVEYOR SYSTEMS

Set up for continuous production! To eliminate needless manhandling, to speed the flow of materials from one department to another . . . metal stampings are moved from punch presses to assembly operation on a "Streamliner" Horizontal Belt Conveyor. Because it's engineered to customer's plant and product, this production-increasing "Streamliner" saves time, money and effort—helps to move materials safely, too! Write for our 24-page "idea-stimulating" catalog. It shows examples of "Streamliner" Conveyors in action!

HARRY J. FERGUSON COMPANY
125 WEST AVENUE, JENKINTOWN, PENNA.

If you write maker identify as **IEN - 891**

GRIES CUTS COST AND TIME!



Write Today for Samples and Bulletin

GRIES REPRODUCER CORP.

797 E. 132nd St., New York 54 • Tel.: MOtt Haven 5-7400

If you write maker identify as **IEN - 892**

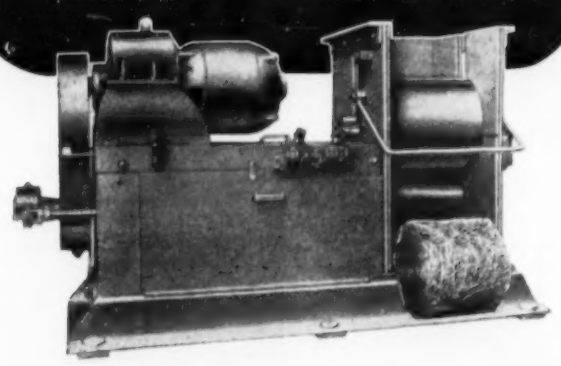
NOW! Bundle Scrap

into

18" and 24" Diameter Bundles

EASY TO HANDLE, SHIP, REMELT OR STORE . . . with the

McLanahan SCRAP BUNDLER



Designed for efficient bundling of scrap wire and strip metals, anything of a stringy nature, the new McLanahan Scrap Bundler "wraps" scrap into compact cylinders for easy handling. Fast and economical in operation, this new machine is the answer to your scrap bundling problems.

Write for new "Scrap Bundler" Bulletin Today!

McLANAHAN and STONE Corp.

Hollidaysburg, Pa. SINCE 1835

If you write maker identify as **IEN - 894**

CHUCK . . Electro magnetic design mounted on universal sine plate base

Source: MAGNA-LOCK INC.
P. O. Box 816-A, Dept. 150, Big Rapids, Mich.

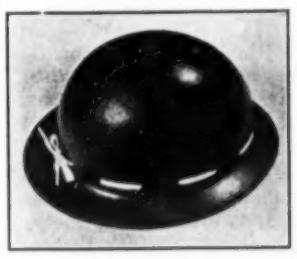
The Magna-Lock Sine

Angular work, involving either simple or compound angles, can be set up on a surface grinding machine with the aid of this new combination magnetic chuck and sine plate base. Angles are set with the aid of standard gage blocks. The blocks are selected by reference to a tabulation supplied with each chuck. Work surface dimensions are 6½ and 11½ in. in length, 6 in. in width. The table of constants covers 5-in. and 10-in. sine bars.

If you write maker identify as **IEN - 895**

PROTECTING . . Safety hat molded in one piece of fiber glass

Source: UNITED STATES SAFETY SERVICE CO.
1213-17 McGee St., Kansas City 6, Mo.



Strong and light

A single blank of fiber glass is molded to shape to produce this new Saf-Hed-Hat. The material will not split, crack, or deform in service. It meets the ASA Code for dielectric breakdown and impact resistance, complies with Federal Specifications. A cradle inside the hat can be adjusted to fit any head.

If you write maker identify as **IEN - 896**

HANDLING . . Magnesium skid to unload drums, barrels from a truck

Source: MAGLINE INC.
7930 Mercer St., Pinconning, Mich.

Feather light

Standard sizes, ranging from 5 to 18 ft. in length, are available in this new welded magnesium barrel skid. Special sizes are available to specification. It can be handled easily by one man, has ample strength to support 55-gal. drums filled to capacity. It can be employed for truck loading, as well as unloading, when the truck is equipped with a power winch as standard.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 897**

DO YOUR OWN TESTING

. . . tensile, compression, transverse or shear

DILLON Universal Tester

saves *Time and Money*

Average operator can make hundreds of tests *(Standard Model)* a day on spot welded specimens, riveted assemblies, plastic, wire, rubber, cloth, etc.

These portable testers easily handle flat, round or special shapes with extreme accuracy. Perfect for lab or shop. Manual or motorized. Will test materials with tensile strength as low as .25 pounds or as high as 125,000 pounds P. S. I.

Write today for free Tensile Strength Computer and illustrated folder with detailed information.

W. C. DILLON & CO., Inc.

14620K KESWICK ST. • VAN NUYS, CALIF. (SUBURB OF LOS ANGELES)

If you write maker identify as **IEN - 898**

G-E CAPACITORS SAVE

$1800 Yearly On Power Costs

By improving power factor with General Electric capacitors, the Montrose Chemical Corp. of California located in Los Angeles saves $1800 a year on its electric power costs. These power bill savings paid for the capacitors in less than 10 months . . . and the $1800 yearly savings will go on indefinitely.

YOU TOO CAN SAVE with G-E capacitors if your power-factor is less than unity and if you have a power-factor or kva-demand clause in your contract.

Capacitors also offer other benefits. They often permit you to handle 20 to 30% more load on your existing system. They reduce losses by reducing line current. These added benefits often make capacitors a worthwhile investment even when no power-factor or kva-demand clause is in effect. For more information, see your local G-E representative. Or write for Booklet GEA-5632. Address Section 441-101, General Electric Co., Schenectady 5, New York.

GENERAL ELECTRIC

If you write maker identify as **IEN - 899**

a NEW idea in refrigerators...

a GREAT idea in PHENOLIC PLASTICS

Servel's portable "Wonderbar" travels to any room in the house—parks right at your elbow!

Molded of BAKELITE Phenolic Plastic, the cabinet puts this electric refrigerator in the fine furniture class. With its clean modern lines, rich mahogany color, and permanently smooth finish, it "belongs" in living room, bedroom, or den.

BAKELITE Phenolic Plastics are resistant to stains and abrasion—always look clean. Light in weight, they help make the "Wonderbar" easy to move about. They have good thermal characteristics. They're strong—the "Wonderbar" door opens to form a serving shelf, has to take a lot of slamming. They are quickly molded to the precise dimensions needed for quick assembly and tight sealing.

If you're planning a new product—or bringing an old one up-to-date—try BAKELITE Phenolic Plastics. Our engineers will help you. Write Dept. OQ-14.

Cabinet Molded by General American Transportation Corporation

BAKELITE
TRADE-MARK
PHENOLIC PLASTICS
TRADE MARK

BAKELITE COMPANY
A Division of Union Carbide and Carbon Corporation
UCC
30 East 42nd Street, New York 17, N. Y.
In Canada: Bakelite Company (Canada) Ltd., Belleville, Ont.

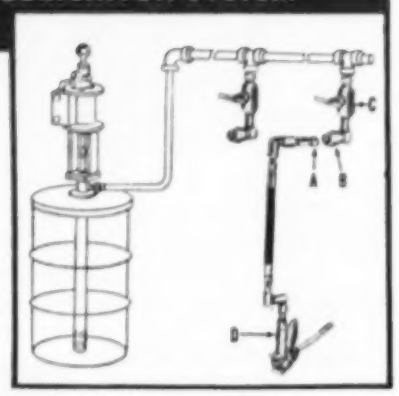
If you write maker identify as **IEN-901**

JUST LIKE A WATER TAP!

ALEMITE TOTE-A-HOSE

POWER LUBRICATION SYSTEM

Brings Waste-Free Mess-Free Lubrication to Multiple Stations Throughout the Plant!



Production line assembly will run smoother . . . machine maintenance will be faster if high-pressure lubrication is available at any point—on any floor throughout your plant. And now—just as water is piped—this new Alemite Tote-A-Hose System carries lubricants barrel-to-bearing *right to the job.*

Lubricant under pressure from the supply pump is always available at all stations. Lubrication man "totes" a compact hose and control, merely snaps the fitting "A" into the coupler "B," opens the valve "C" and he is ready for efficient, powerful lubrication of bearings from control valve "D."

Get The Facts! Write now for complete FREE information. Address Alemite, Dept. K-13, 1850 Diversey Parkway, Chicago 14, Illinois.

ALEMITE
Industrial Lubrication Equipment

If you write maker identify as **IEN-902**

How to get the right drill for YOUR job!

The *right drill for the job* saves you time, money—and gives you better work! Why settle for a drill that's "almost" right?

PET Superduty drills are made in 54 distinct models, each with speeds and rated power that industrial users have asked for. Result? You can choose the drill that's *exactly* right for your job!

To top it off, every PET Superduty drill is built for rugged service. Dynamically balanced armatures stop vibration. Forced ventilation keeps them cool. Precision-cut gears run smooth, stay quiet. Big reserve power makes motors last longer.

Free Catalog can save money—for YOU!

If you want details on the best in electric drills—*at prices that will come as a pleasant surprise*—get the illustrated PET Superduty catalog! For your free copy, and name of your nearest PET distributor, write today to Dept. IE-13.

PET POWER TOOLS

PORTABLE ELECTRIC TOOLS, INC.
320 West 83rd Street, Chicago 20, Illinois
In Canada: Portable Electric Tools, Ltd., Toronto, Ontario

If you write maker identify as **IEN-903**

CALL

Your steel requirements get prompt personal attention at Ryerson. Some kinds and sizes in short supply; so use Gov't. ratings when they apply. We'll do our best to help.

RYERSON

PRINCIPAL PRODUCTS:

Bars • Structurals • Plates • Sheets • Tubing
Allegheny Stainless • Alloy Steel
Inland 4-Way Safety Plate • Babbitt
Metal Working Machinery & Tools, etc.

FOR STEEL

JOSEPH T. RYERSON & SON, Inc.

Plants at: New York, Boston, Philadelphia, Detroit, Cincinnati, Cleveland, Pittsburgh, Buffalo, Chicago, Milwaukee, St. Louis, Seattle, Spokane, Los Angeles, San Francisco

If you write maker identify as **IEN-904**

DRILLING . . Carbide tipped tool for hardened steel, 1/8 to 1/2 inch

Source: SUPER TOOL CO.
21652 Hoover Road, Detroit 13, Mich.

Carbide end dissipates heat

Eleven sizes are now carried in stock in the company's hard steel drill equipped with a solid carbide end. **Ten sizes** also are available, between 1/16 and 3/4 in., in a hexagon shank carbide tipped design. One of the drills is shown having penetrated a hard file. It can do this easily. Super Hard designates the tool, previously described IEN-2449-51.

If you write maker identify as **IEN-905**

PROTECTING . . Plastic goggle, one piece, one ounce, for general use

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

Ventilated sides

No. 481 is a new modified design of the No. 479 clear plastic goggle, previously described IEN-11896-50. The new unit provides a clear plastic lens for frontal vision and protection. Transparent green sides, top and bottom shield against glare. It is intended for operations such as babbitting, chipping, grinding, spot welding and for work in the presence of splashing chemicals.

If you write maker identify as **IEN-906**

COUNTING . . Electronic equipment closes circuit at a preset total count

Source: BERKELEY SCIENTIFIC DIVISION
2202 Wright Ave., Richmond, Calif.

Ten preset buttons

Model 730 is a new electronic decimal counting unit with a direct reading counter to operate at speeds to 40,000 per second. The unit is plug-in design. It is set by depressing push buttons on the housing face. When a count reaches the set total the counter closes a circuit to provide an output pulse. This pulse can be used to reset the unit electronically when continuing operation is required in service.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN-907**

NOW No More Lost Time or Revenue Due to Painting or Paint Odors

Because there is absolutely no paint odor, and it is fast-drying, new Tropilux ODORLESS oil-base flat interior paint lets you paint without interruption of business.

Work areas, hotel, motel, hospital rooms, offices, stores and restaurants lose no work time or income when Tropilux is used.

In addition, it is self-priming, has good one-coat coverage, dries free of brush marks. Use over almost any old-paint surface of walls, ceilings—on interior plaster, cement, wallboard or masonry.

Formulated for hard service, it takes plenty of hard scrubbing, actually could be washed down within 48 hours of application!

FREE! Your business letterhead request brings full details on Tropilux ODORLESS—formulated especially for industrial maintenance painting needs. Write today!

THE TROPICAL PAINT & OIL CO. 1126-1260 W. 70th, Cleveland 2, O.

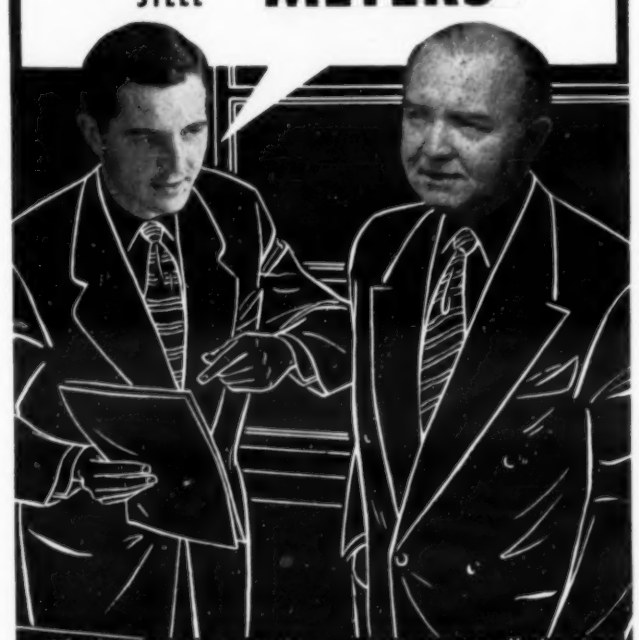
Heavy-Duty Maintenance Paints Since 1883

TROPICAL
Subsidiary of Parker Rust Proof Company

If you write maker identify as **IEN-908**

If you write maker identify as **IEN-909**

"Measuring CORROSIVE LIQUIDS is no problem with NIAGARA STAINLESS STEEL METERS"



Whether you're measuring caustic soda, acids, molten sulphur or many other corrosive liquids, you want reliable measurement all the time. NIAGARA METERS — made of type 316 stainless steel—resist damage from a wide range of corrosive products. Maintenance is kept to the absolute minimum because of the unusual simplicity in construction of NIAGARA METERS.

If you process or use liquids of a corrosive nature, it will be to your advantage to investigate NIAGARA.

Send in the Data Request blank below . . . today.

BUFFALO METER CO.
2893 MAIN STREET
BUFFALO, N.Y.

Gentlemen:
Please send me complete information on the use of economical NIAGARA METERS, based on the data below:

Liquid _____ Pressure _____ p.s.i.
Temp. _____ °F.
Flow rate _____ g.p.m.
Maximum batch _____ gals.
Name _____
Company _____
Address _____

If you write maker identify as IEN-911

A PAID NEWS ADVERTISEMENT BY NATIONAL MOLDED PRODUCTS, INC.

SELF-LUBRICATING BEARINGS AND MECHANICAL PARTS

SINTRLOY — DUCTILOY — SEALALOY

SINTRLOY — Powdered Bronze Bearings are used by the millions in sweepers, refrigerators, washing machines, portable electric and pneumatic tools, medium and light industrial equipment.

DUCTILOY — Powdered Bronze Bearings and Mechanical Parts to be used in heavy duty applications where greater strength and shock resistance are required.

SEALALOY—Powdered Bronze Material used for mating rings in rotating mechanical seals to give excellent wearing qualities and shock resistance. Manufactured to your exact requirements.

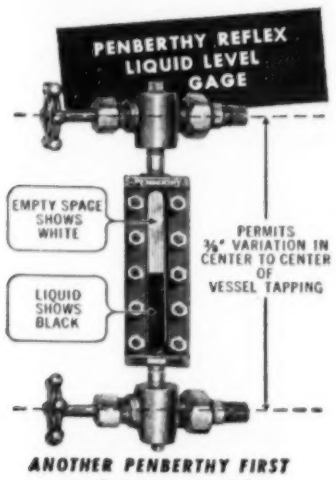
MAY WE QUOTE ON YOUR SPECIFICATIONS AND PRINTS? NO OBLIGATION.

NATIONAL MOLDED PRODUCTS, INC.
1945 Mill Street St. Marys, Pa.

If you write maker identify as IEN-912

PENBERTHY "Floating Shank"

Saves Time and Money in Gage installation



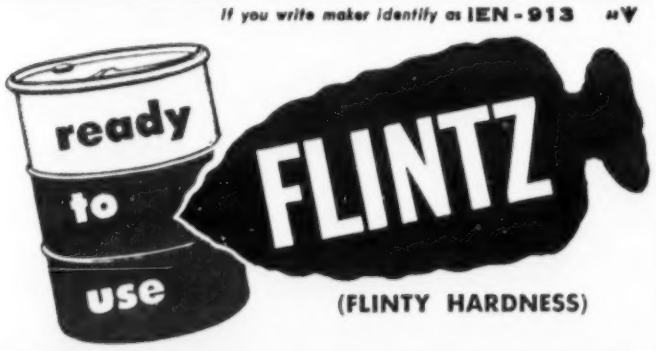
A feature available only on Penberthy drop forged steel (and alloy) gage valves, the "floating shank" automatically compensates for as much as 3/8" variation in the center-to-center distance of the vessel tapping. This saves time and cuts the cost of gage installation . . . eliminates stresses often induced during mounting. Penberthy "floating shank" is available at slight additional cost. It will pay you well to specify "floating shank" on your next gage order.

ANOTHER PENBERTHY FIRST

Ask for Catalog 35

PENBERTHY INJECTOR COMPANY
DIVISION OF THE BUFFALO-ECLIPSE CORPORATION
Established 1886 DETROIT 2, MICHIGAN *Canadian Plant, Windsor, Ont.*

If you write maker identify as IEN-913



(FLINTY HARDNESS)

HARD RESURFACER FOR CONCRETE

Move a truck a foot on FLINTZ and it will drift another . . . FLINTZ make-ready is surface cleaning only, without cutting . . . FLINTZ feather edges . . . Placing is as easy as (well, can you spread moist sand?) . . . FLINTZ means easy starting!

Some concerns have used thousands of bbls. of our resurfacers — just finished placing a 330 bbl. order for a world-wide concern — and would be de-lighted to furnish materials or install for you at your option.

"KEEP 'EM ROLLING"

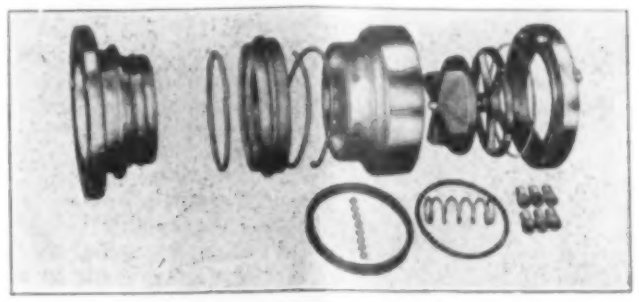
Write today for FLINTZ booklet, "Keep 'Em Rolling" for full details, or address inquiries to:

DURA-TRED CO. SINCE '38
349 N. CENTRAL PARK BLVD • CHICAGO 24, ILL.

If you write maker identify as IEN-914

PIPE FITTING . . Self seal coupling closes on quick line disconnection

Source: SNAP-TITE INC.
203 Titusville Road, Union City, Pa.



No tools to open or close

New 8-in. size has been added to the company's line of quick-acting pipe or hose couplings. The line now includes sizes from ¼ to 8 in., with threaded fittings to 3 in. and either threaded or flanged fittings above that size. Each assembly swivels through a complete circle and is connected by pressing in the male portion shown to the left in the illustration. This portion is locked in place by a ring of balls held inwardly by the sleeve, shown to the right of the male part.

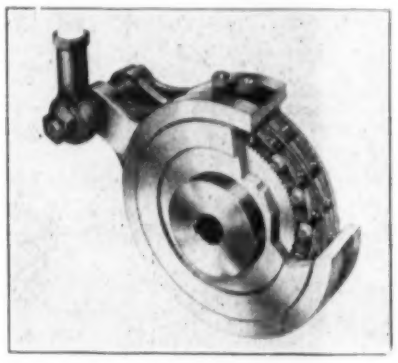
A valve assembly, enclosed in the housing, about center, is held open as long as the male end is in place. This valve closes to prevent loss of fluid when the locking sleeve is retracted and the coupling is opened.

Construction includes forged steel, bronze or other specified material. The coupling will handle liquids, air, gas in pressure or vacuum lines. It can be supplied without the internal valve if the closing action is not required.

If you write maker identify as IEN-915

PRESS TOOLS . . Ratchet index wheel for roll feed, adjusts to 0.006 inch

Source: DURANT TOOL SUPPLY CO.
153-57 Orange St., Providence 3, R. I.



Standard, heavy, extra duty

Select-O-Matic is a new multiple pawl ratchet index wheel for application on a roll type press feed. It permits adjustment of the feed in 6,720 equal increments, each measuring 0.006 inch. The assembly measures 5¾ in. in outside diameter. It can be employed with any standard roll feed to replace the usual clutch. The 0.006-in. adjustment increment is based on a feed equipped with rolls measuring 2 in. in diameter.

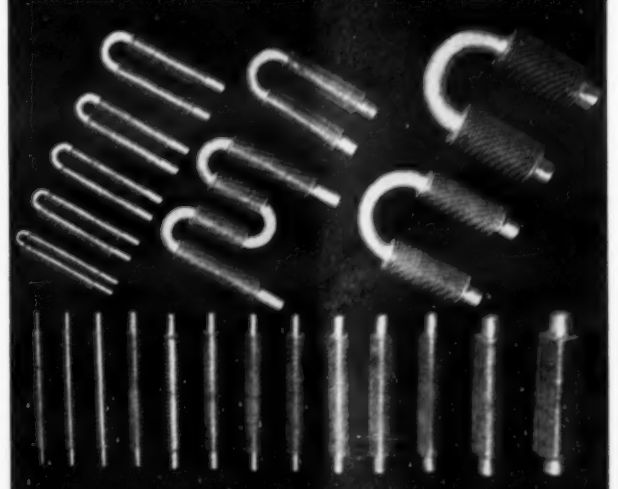
Surrounding the 210-tooth index wheel are two sets of 16 ratchets, 32 in all. They are located inside the circle formed by two garter springs so one is contacting the ratchet wheel at a time. The assembly is enclosed and sealed against entrance of dust and dirt. In operation the housing is filled with SAE-10 automotive oil. List price for the standard unit is $165.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-916

RO-FIN TUBES

IDEAL SURFACE FOR HEAT TRANSFER



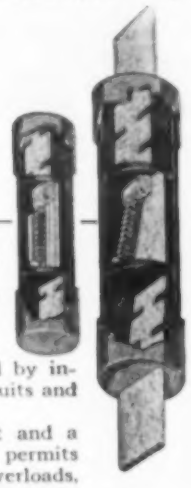
Over 100 sizes in production!

ROME
TURNEY RADIATOR COMPANY

200 East Front Street • Rome • New York

If you write maker identify as IEN-917

BUSS fusetrons ...via Graybar



Dual-element fuses give accurate, dependable protection against overloads and shorts

Needless blowing of fuses can be avoided by installing BUSS Fusetrons in all type of circuits and feeders.

Fusetrons contain a fuse link element and a thermal-cutout element. A long time lag permits occasional surges of current and harmless overloads, such as for motor starting, yet BUSS Fusetrons open with the speed of an ordinary fuse to protect against dangerous overloads and short circuits.

Low electrical resistance keeps down operating temperatures and prevents damage to switches and panelboards.

BUSS Fusetrons are available in midget-, cartridge-, and plug-type fuses 1/10 to 600 amperes up to 600 volts. For the full story on BUSS Fusetrons and other types of fuses, see the Graybar representative nearest you. He's prepared to take care of all your electrical needs. *Graybar Electric Co., Inc. Executive Offices: Graybar Building, New York 17, N. Y.* 299-181

Call Graybar *first* for . . . Everything Electrical GraybaR ELECTRIC COMPANY

If you write maker identify as IEN-918

SPRING WIRE

Absolutely uniform in gauge, finish and mechanical properties

ROEBLING is about the largest specialty wire manufacturer in America . . . and Roebling uniform quality always helps cut preparation time and boost production for users.

Typical of Roebling specialty products are mechanical spring wires including hard drawn, soft, annealed or oil-tempered M.B., H.B. and Extra H.B.; music wire; upholsterers' spring wire and valve spring wire . . . all in a full range of mechanical properties and finishes.

We can give you fast deliveries to meet your needs, right now! John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

If you write maker identify as IEN-919

Delpark COOLANT FILTERS

FOR GREATER GRINDING EFFICIENCY

Grinding problems can be minimized and production increased with Delpark Full-Flowing, Self Cleaning Coolant Filters. Complete and continuous filtration of soluble oils and cutting oils removes heat-bearing solids as coolant comes from the work. Assures more uniform limits, better finish, and greater accuracy with a clean wheel and lower coolant temperature. Fully automatic, no down time for cleaning reservoir, extends coolant life. Two to several hundred gallons per minute capacities.

- Less wheel dressing
- Longer wheel life
- Uniform coolant temperature
- Lowers rejections
- More accurate gauging

Delpark
INDUSTRIAL FILTRATION
Backed by 30 Years Experience in Industrial Filtration

Write for more complete information

INDUSTRIAL FILTRATION COMPANY
5110 Industrial Avenue • Lebanon, Indiana

If you write maker identify as IEN-920

Saves up to 40% Space!

Streamlined construction of the new T-J Cylinders *eliminates tie rods . . . reduces head size . . .* and *saves up to 40% in mounting space!* In addition, a new high in strength is achieved with solid steel heads and heavy wall seamless steel body . . . leakproof construction . . . extra high safety factor. Cylinder walls are precision honed and hard chrome plated for long-life efficiency. Available with new T-J Super Cushion Flexible Seals. Many standard sizes and styles . . . cushioned and non-cushioned . . . for pushing, pulling, lifting, clamping or control jobs. Write for bulletin 8152. The Tomkins-Johnson Co., Jackson, Michigan.

37 YEARS EXPERIENCE T-J
TOMKINS-JOHNSON
MAKERS OF AIR AND HYDRAULIC CYLINDERS, CUTTERS, CLIMBERS

If you write maker identify as IEN-921

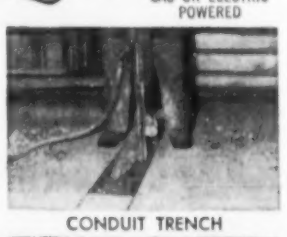
LOOK JOE!...
NO MORE ROUGH, JAGGED OPENINGS in CONCRETE FLOORS
...SAVE Up to 50% with a..... Clipper CONSAW

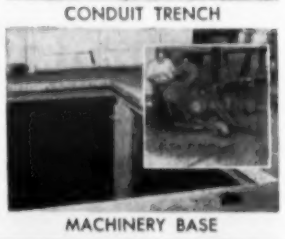
Save up to 50% in labor and material. Saw repair patches—saw gas, water, sewer and air line trenches in floors, runways and streets. Stops cracking and spalling—stops high maintenance costs.

It's Yours on...
FREE TRIAL
Discover how Clipper will increase profits by decreasing maintenance costs. "On the Job" FREE TRIAL guarantees you satisfaction at no obligation!

MODEL C-130
ONE OF 5 MODELS
GAS OR ELECTRIC POWERED

OUR ONLY BUSINESS FOR NEARLY 20 YEARS . . . MASONRY AND CONCRETE SAWING!
The unqualified Clipper guarantee of satisfaction is backed by world-wide experience, the ability to select the finest materials, and the "know-how" to put them together.


CONDUIT TRENCH


MACHINERY BASE

CLIPPER SUPERIOR DIAMOND BLADES
. . . guaranteed to . . . "Consistently Provide the fastest cut . . . at the lowest cost . . . with the greatest ease!" Clipper alone can supply every necessary metal bond . . . in over 36 specifications.

SAME DAY SERVICE FROM YOUR NEAREST FACTORY BRANCH —SEE BELOW

CLIPPER . . . the World's FIRST MASONRY SAW
Every shape and size refractory **cut in seconds!** Perfect fitting reline jobs that last longer—cost less. A Clipper Model to fit any job—any budget. SOLD on FREE TRIAL!
MODEL HD
15 MODELS PRICED FROM $265

Clipper MANUFACTURING CO.
DIRECT FACTORY SERVICE

- CINCINNATI
- BOSTON
- WASHINGTON, D.C.
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- SAN FRANCISCO
- ATLANTA
- DETROIT
- PITTSBURGH
- NEW YORK
- BIRMINGHAM, ALA.
- LOS ANGELES
- INDIANAPOLIS
- ST. PAUL
- MILWAUKEE
- DALLAS

IN CANADA – P.O. BOX 476, WINDSOR, ONTARIO

TEAR OUT AND MAIL!
CLIPPER MANUFACTURING CO.
11 East 28th Street • KANSAS CITY 8, MO.
Send FREE Literature and Prices on:
☐ CLIPPER CONSAWS ☐ CONSAW DEMONSTRATION
☐ CLIPPER MASONRY SAWS ☐ CLIPPER DIAMOND BLADES
No. 16-CI
COMPANY _____
ADDRESS _____
CITY _____ STATE _____

If you write maker identify as IEN-923

COMMUNICATING . . Radio transmitter for use in plant yards, departments

Source: MOTOROLA INC.
4543-47 W. Augusta Blvd., Chicago 51, Ill.

"All OK here"

Handie Micro Talkie is a new battery powered transmitter weighing a little under 2 lb. and measuring 7⅜ by 2½ by 1¾ inches. It mounts a rigid chromium plated loop antenna that serves also as a carrying handle. A button on the side of the housing is pressed, prior to talking, to transmit to any standard communications receiver tuned to the frequency.

The housing encloses dry A and B batteries, the former suited for a work week of normal operation. The latter is good for 2½ weeks. The assembly includes eight sub-miniature tubes in a "printed" circuit. Output power is 20 to 40 milliwatts. Operating range is to 5 miles.

If you write maker identify as IEN-924

CLEANING . . Liquid and powder blend in cold water for metal parts

Source: E. F. HOUGHTON & CO.
301-5 W. Lehigh Ave., Philadelphia 33, Pa.

Technical data upon request

Houghto-Clean No. 439 and 440 make a new combination of oily amber colored liquid containing active organic wetting agents, detergents and rust inhibitor with a white powder composed of a combination of buffered alkalis free from caustic soda or carbonates. The two materials are blended in cold water while it is being agitated at room temperature.

The solution is employed in power washing machines to clean metal work parts. Heavy drawing oils, pigmented drawing compounds, sulphurized cutting oils, rust preventives, polar type smuts can be removed from ferrous metals, copper and brass. Heat is not required.

If you write maker identify as IEN-925

WHEEL . . Roller bearing design, semi-steel with solid rubber tire

Source: PHILLIPS MINE & MILL SUPPLY CO.
2500 Jane St., Pittsburgh 3, Pa.

For industrial trucks

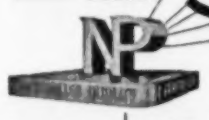
Diameter ranges from 6 to 12 in. with load rating at 230 to 1,140 lb. for this new semi-steel rubber tired industrial wheel. Tough solid rubber is molded permanently to the wheel rim. The hub is drilled to take a $\frac{1}{16}$-in. drive type grease fitting. Hub length is 1¾ to 3¼ inches. Axle diameter is ⅝ to 1¼ inches. Weight ranges from 3.2 to 19.5 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-926

NEWCOMER CARBIDE Specialists will gladly show you how to

WITH THE NEW GRADE **S-6** CUTTING CARBIDE



Highlights of the NEW S-6

S-6 Carbide is new and different — *industry-proven* on machining Armor plate, rough steel forgings and castings. Even though S-6 Carbide can be used at high machining speeds, its greatest tool life is obtained at speeds slower than those at which other grades of carbide can be successfully used. S-6 Carbide makes deeper cuts because it can be set for heavier feeds. S-6 Carbide, because of its extremely high strength, is excellent for interrupted cuts.

Write today for Catalog No. 108 which shows all other standard grades of Newcomer Carbides.

NEWCOMER PRODUCTS, INC.
General Sales Offices
PITTSBURGH 21, PENNA.
Plants at LATROBE, PENNA.

If you write maker identify as IEN-927

Chem-Board Tote Boxes HELP BUILD AIRCRAFT . . .

Many plants building the planes needed to make the nation strong keep materials, parts and sub-assemblies flowing to production lines in thousands of Conroy Chem-Board Tote Boxes. The nesting boxes illustrated are stored in minimum space while awaiting new loads.

Chem-Board is made of corrugated fibre-board, chemically impregnated by Convoy's exclusive process. It is flint hard and rock strong. It is not weakened by moisture. It is impervious to machine oils. Convoy Tote Boxes cost and weigh 50% to 60% less than steel.

The lightness, toughness and economy of Chem-Board Tote Boxes are unmatched. Tell us the style you use . . . we'll send a free production sample from the next run for you to test. As a guide for present and future availability, our current production capacity is reserved for the unprecedented demands from old customers and "DO" orders. Orders rated DO-MRO are acceptable. Write today.

Standard and Custom-made
Nesting — Stacking — Vertical
CHEM-BOARD TOTE BOXES

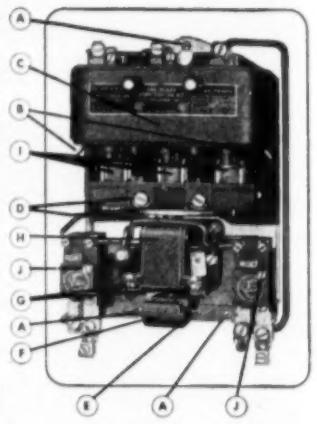
CONVOY, INC.
P. O. Station B, Box 216-1
CANTON 6, OHIO

If you write maker identify as IEN-928

Easier to Maintain!

EVERY PART REMOVABLE FROM FRONT IN NEW CLARK TYPE "CY" AC STARTERS

An entirely new principle of arc interruption substantially lengthens contact life on CLARK Type "CY" AC MOTOR STARTERS. A new design provides faster and easier inspection and maintenance by permitting removal of all parts from the *front*. No special tools required.



1 To inspect movable contacts, push down contact bars to depress springs "I".
2 To inspect stationary contacts, open snap-action cover clips "B" releasing lower arc shield "C".
3 To replace movable contacts, loosen captive screws "D" and remove contact arm. Contacts are quickly removed.
4 With contact arm removed, stationary contacts are replaced by dropping lower arc shield and turning contacts with wrench.
5 Magnet coil is easily changed by removing coil connections and loosening captive screws "G". Remove armature "F" by pushing snap-in pin "E" in direction of knurled head.
6 Stationary Magnet Frame "H" can be removed by taking out four screws.
7 To insert or replace an overload heater coil, remove one screw "J" and lift off cover plate.
8 An entire overload relay assembly can be removed by disconnecting wiring and taking out two screws.
9 Control circuit relay block is front-removable by taking out one screw, after moving contact arm has been removed.
10 Entire control unit-on base plate-can be lifted from cabinet by loosening three screws "A".

Could anything be simpler?
Write for descriptive literature.

THE CLARK CONTROLLER CO.
ENGINEERED ELECTRICAL CONTROL • 1146 EAST 152ND STREET, CLEVELAND 10, OHIO

If you write maker identify as IEN-929

GOES A LOT FARTHER

To Improve Production, End Dust Health Hazard Reduce Rejects and Maintenance Costs

HOFFMAN HEAVY DUTY VACUUM CLEANING
Bigger Capacity—Higher Vacuum
Now Available in 5 Sizes of Improved Portables. Stationary Systems in a Complete Range of Sizes. Write for New Bulletins A-814 and A-816.

AIR APPLIANCE DIVISION
U.S. HOFFMAN
MACHINERY CORPORATION
103 Fourth Ave., New York 3, N. Y.
Canadian Plant: Canadian Hoffman, Newmarket, Ont.

If you write maker identify as IEN-930

The Jacques Model 45 Slitter & Rewinder

For Low Cost Slitting & Rewinding

OF PAPER, PLASTICS, FABRICS, LAMINATIONS, ETC.

Here's a machine designed for low cost slitting and rewinding of light materials up to 20/1000" thick. Handles widths up to 45" and parent rolls up to 40" diameter.

Because of its improved design, this Jacques slitter saves you money in initial cost, and in installation and operating expenses. Faster, easier production is made possible by new patented frictions. Available with rotary contact or razor-type cutters (or both) for your individual needs.

FREE FACTORY TEST RUN! Send your material and specifications to our plant for free test run at no obligation.

WRITE FOR DESCRIPTIVE FOLDER! *Get detailed information now!* For trouble-free performance through the years, specify only *genuine* Hobbs replacement parts.

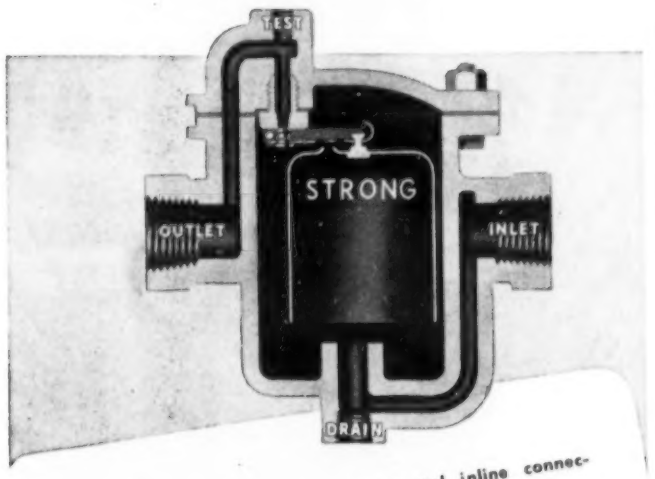
HOBBS MANUFACTURING CO.
40 SALISBURY ST., WORCESTER 5, MASS.
EST. 1882

Producers of Modern Machinery for Modern Industry

Jacques Hand and Power Shears, Slitters and Rewinders, Hobbs Autotronic and Tri-Power Die Presses, Paper Box Machinery and Touch-O-Matic Industrial Cutters.

If you write maker identify as IEN-931

Get this *SMALL* TRAP With *BIG* TRAP quality features!



- Renewable seat—easily removed for servicing.
- Strong's patented, wear-resistant Anum-Metl† valve and seat—guaranteed leak-proof for one year. Scientifically designed Hi-Cap* orifice gives greater capacity.
- Oversized ports—increased capacity.
- Horizontal inline connections—simplifies piping.
- Stainless 18-8 high ratio leverage.
- Large gasket area.
- Seamless, deep drawn, stainless 18-8 bucket—no welds.
- Bottom drain or inlet connection.

Available for pressures from 0 to 150 p.s.i., the Strong* No. 070 fits all standard trap applications. Built especially for use on laundry, restaurant and hospital equipment and in industry wherever small drainage is a problem.

As with all Strong Semi-Steel Traps, the 070 is guaranteed against defects in material and workmanship for one year. Write today for Catalog 68-I.

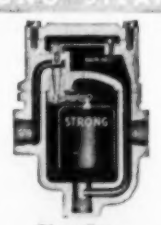
*T. M. Reg. U. S. Pat. Off.

STRONG, CARLISLE & HAMMOND COMPANY
1392 WEST 3rd Street
Cleveland 13, Ohio

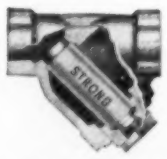
† ANUM METL Reg. Trade Mark

OTHER STRONG STEAM SPECIALTIES

Reducing Valve



Blast Trap



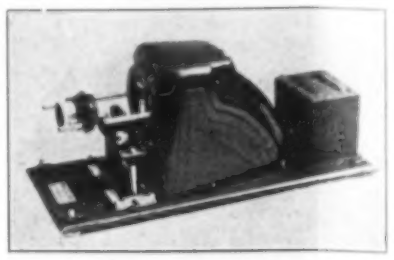
"SY" Strainer

STRONG

If you write maker identify as IEN-933

GAGE . . Optical projector produces magnified image on screen

Source: INTERNATIONAL STANDARD TRADING CORP.
22 Thames St., 9th Floor, New York 6, N. Y.



Made in England

Inspectoscope is a new optical projector that mounts a light source and transformer, an adjustable work stage and a 3-in. focal length f3 objective lens. The instrument measures 19½ by 9½ by 8 inches. Its 12-volt light source operates on a 220-volt ac. line through the transformer at the back of the light source or direct through a storage battery supplied by the user. The field measures ½ in. in diameter.

The instrument will take work to 1 inch. It also will project single and double frame film strips, 2 by 2-in. Leica slides and micro slides. Magnification can be specified to 50X. For normal use, 25X is recommended.

If you write maker identify as IEN-934

SEALING . . Thermosetting plastic seals electronic and electrical parts

Source: MITCHELL-RAND INSULATION CO.
51 Murray St., 1st Floor, New York 7, N. Y.

Working sample upon request

Randac trade names a new thermosetting encapsulating plastic to coat, seal and encase such parts as transformers, resistors, rectifiers, capacitors, transistors, printed circuits, electronic assemblies, against contact with moisture, to insulate them electrically and protect against shock or resistance. Corona control is provided by void filling and coating high voltage transformers, parts and assemblies.

The material seals hermetically and encases the parts in thicknesses from 25 mils to ¼ in., or more, without requiring casts or molds and without needing to employ more than one dip cycle. Service temperature is minus 65 to plus 150 deg. C.

If you write maker identify as IEN-935

MAGNIFYING . . Illuminated unit connects to power line, mounts 10X lens

Source: EDER INSTRUMENT CO.
2291-95 N. Clybourne, Dept. 22, Chicago 14, Ill.

Image shows clearly

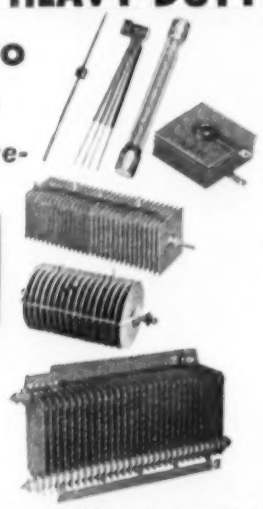
Plastic eye cup threads into the metal housing of this new magnifier to mount a 10X lens. Beside it is a miniature lamp with its leads inside a short length of flexible tube. Tube and leads terminate in a threaded connector for application in the end of a transformer housing that the company is prepared to supply for connection to a 110-volt power source. The magnifier applies for precision examination of work in progress as well as finished pieces.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN-936

SUBMINIATURE to HEAVY DUTY —MILLIWATTS to KILOWATTS—

whatever the DC requirement—there's a



Federal

SELENIUM RECTIFIER TO DO THE JOB!

In 1938, Federal introduced selenium rectifiers to the U.S. Today, *tens of millions* are at work in almost unlimited fields of application. Here's *proof* of the *high quality* built into Federal's *compact, economical, long-life, fully inert* selenium rectifiers . . . here's *proof* of their *efficiency* and *dependability!*

Federal also provides ENCAPSULATION of selenium rectifiers—plus other components . . . a unique development in component-sealing! For complete information, write to Dept. F-423.

America's first and largest manufacturer of selenium rectifiers

Federal Telephone and Radio Corporation
An ITT Associate
100 KINGSLAND ROAD
CLIFTON, N. J.

If you write maker identify as IEN-937

Ask for demonstration or FREE BOOKLET
Submit your tacking problems, with specimens

A. L. HANSEN MFG. CO. 5051 Ravenswood Ave. CHICAGO 40, ILL.
Distributors in principal cities

If you write maker identify as IEN-938

You'll be amazed at the *new cost-cutting efficiency* that a DeWalt brings to your boxing and crating operations!

It cross-cuts and rips with amazing speed and accuracy—enables you to turn out large quantities of precision-made boxes and crates in record-breaking time!

And there's less waste material when you use a DeWalt—another factor that helps to cut costs.

Investigate this source of potential higher profits today! Send for catalog to DeWalt Inc., Dept. B-1, Lancaster, Pa.

De Walt Inc. Lancaster, Pa.

DEWALT
POWER SAWS

Subsidiary of AMERICAN MACHINE AND FOUNDRY COMPANY, New York

If you write maker identify as IEN-939

SERIES 155-A RELAY

The Series 155-A Relay is compact, sturdy, easily mounted, small in size. Constant spring tension contacts attached to armature "make" before armature completes its travel. Fixed contacts mounted on field piece. Moulded bakelite armature insulator. Operates up to 220 volts.

Relays BY GUARDIAN

For the operation and control of guided missiles multiple channel transmission is used to scramble channels and frequencies on which the control signal is sent. A Guardian *hermetically sealed* unit, designed for continuous switching, prevents interception of the missile by unfriendly hands.

Another application of Guardian units—the Series 155-A Relay regulates the duty of a Thyratron tube to control the time involved operating a testing tool for the separation of metals. Let Guardian solve your control problem. Write.

GUARDIAN ELECTRIC
1620-A W. WALNUT STREET CHICAGO 12, ILLINOIS

A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

If you write maker identify as **IEN - 940**

The bonus values found in McGill Multirol roller bearings are worth money to you. They mean increased profit measured in terms of savings through improved anti-friction performance. This better performance is due to the consistently higher degree of precision that marks all McGill bearings. For smooth performance, low starting torque, minimum maintenance, ease of assembly, simplified lubrication, and long life in your roller bearing applications . . . investigate the McGill SE, CF and CYR Multirol bearings.

For informative literature write: McGill Manufacturing Co., Inc., Bearing Division, 100 N. Lafayette St., Valparaiso, Indiana.

McGILL precision bearings

If you write maker identify as **IEN - 941**

Wheeler REFLECTORS

Write to 275 Congress Street, Boston 10, Mass.

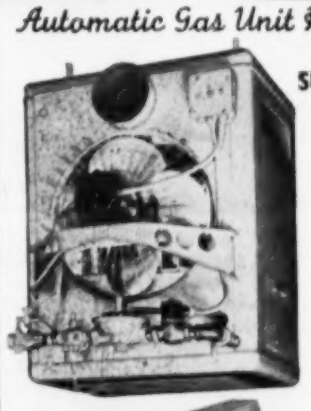
If you write maker identify as **IEN - 942**

REZNOR

Since 1888

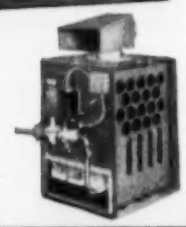
THE NAME YOU CAN COUNT ON!

Automatic Gas Unit Heaters for COMFORT PROCESS



SUSPENDED & FLOOR UNITS

Safe, compact, efficient and good looking heaters for individual or group operations. Equipped with big quiet fan or centrifugal blower, designed for every space requirement, every heating need.



DUCT FURNACES

Here's the answer for your most complicated problem in engineered heating and production line specialties! Basic heat producer, automatically controlled, automatically fueled. Perfect for air conditioning and other systems where close temperature tolerances are maintained.

SEE SWEET'S CATALOG FILES or WRITE FOR HEATING DATA

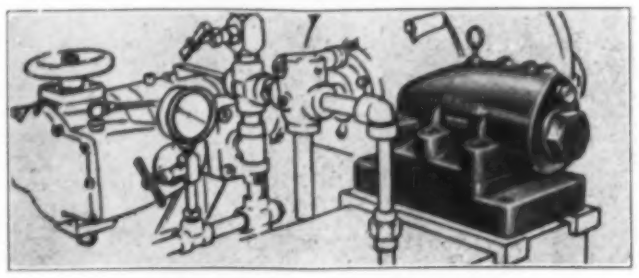
REZNOR MANUFACTURING COMPANY

10 UNION STREET, MERCER, PA.

If you write maker identify as **IEN - 943**

VALVE . . Hydraulic pressure relief, 2 in. size, 125 gpm., 5,000 pounds

Source: DENISON ENGINEERING CO.
1158-62 Dublin Road, Columbus 16, Ohio



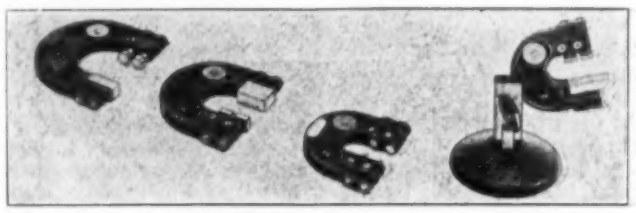
Detail information upon request

Subplate design is employed to mount this new 2-in. pressure relief valve so pipe connections can be made upward through the base and the valve can be removed and replaced readily. Recommended assembly is in a tee connection to the main flow line so only the return oil need be handled through the valve itself when excess pressure conditions are reached. Precision sealing surfaces, within the valve body, minimize leakage. Pressure setting is adjusted by turning a knurled screw on the valve cap. Provision has been made for remote control of this action when desired.

If you write maker identify as **IEN - 944**

GAGE . . Adjustable snap design checks work for go and no-go limits

Source: HvH TOOL & INSTRUMENT CO.
150 Lafayette St., 6th Floor, New York 13, N. Y.



The setting can be locked

A stationary anvil on one side of the C-type frame in this new snap gage carries a stationary jaw. Opposite it are two adjustable anvils or gaging buttons. The outer one of these buttons is set for a maximum allowable size and the inner one to the minimum allowable. The gage is then employed as a "go" and "no-go" limit unit, either by hand or after mounting in a stand as shown in the illustration.

Two ranges start at zero and are maximum at 5$\frac{11}{16}$ and 6 in. respectively. The smaller unit is available in two types, one with buttons and the other with anvils. List prices start at $9.50. The stand adds $11.35.

Identify as **IEN - 945**

Vinyl plastic paste, manufactured by Houghton Laboratories, is being employed to coat the tension wires used in assembling automobile seat cushions. The coating eliminates squeaking noises as the cushions flex. The plastic remains in place over a long period of service. The application points toward coating complete assemblies for seats, mattresses.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 946**

MERRILL BROTHERS
56-14 ARNOLD AVENUE MASPETH, N. Y.

If you write maker identify as **IEN - 947**

ARMSTRONG *Carbide* TOOL HOLDERS

FOR HIGHER SPEEDS, and HEAVIER FEEDS

ARMSTRONG Carbide Tool Holders and ARMIDE (Carbide) Tipped Cutters come in cased sets for tool rooms and maintenance departments, and individually in all sizes for general machine shop and production turning. They permit not only the ready machining of sand-filled castings, the hardest and toughest steels as well as many heretofore "unmachinable" materials, but also make practical much heavier cuts and cutting speeds up to 600 f.p.m. on ordinary work. They also run from 10 to 100 times as long between regrindings.

WRITE FOR CATALOG

ARMSTRONG BROS. TOOL CO.
"The Tool Holder People"
5243 W. ARMSTRONG AVENUE, CHICAGO 30, U. S. A.
NEW YORK • SAN FRANCISCO

If you write maker identify as **IEN - 948**

Think of it—in only 27" is packed the complete power unit for the "Walkie" type lift truck. *Other models are only 23¾" . . . That's space efficiency . . . plus!

If you have a material handling problem that requires minimum "operation area", ask about the "Walkie" MOTO-TRUC. Its application in close areas is making history every day . . . write for complete information on all the advantages of MOTO-TRUC.

Representatives in Principal Cities

The MOTO-TRUC Co

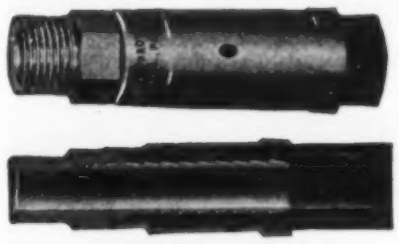
1987 E. 59th STREET • CLEVELAND 3, OHIO

PALLET . . . PLATFORM . . . HI-LIFT TRUCKS

LARGEST EXCLUSIVE MANUFACTURER OF "WALKIES"

If you write maker identify as IEN-950

Longer Service Life for Hydraulic Hose



"PRESS-LOCK" HYDRAULIC HOSE COUPLINGS

Write for literature completely describing the super-strong, super-efficient "Press-Lock" Coupling. Available on Mulconroy Hydraulic Hose Assemblies for all types of equipment, or attached to *your* hydraulic hose shipped to our factory.

"Mulconroy Starts Where Others Stop"

MULCONROY COMPANY
Hose Specialties Since 1887
5327 JEFFERSON ST., PHILA. 31, PA.

If you write maker identify as IEN-951

NEW! Volatile Solvent

CARBON MET

A HALOGENATED AROMATIC HYDROCARBON

A specific replacement for toxic Carbon Tetrachloride

Out and out metal dry cleaning solvent and degreaser in ready-to-use "Handy Kit" containing Patented dip and drier basket.

U. S. Pat. 2318842

- Quick Cutting solvent against stubborn dirt and grease.
- Non-Explosive and relatively non-toxic.
- Non-Corrosive to metals.
- Fast, clean evaporation.
- Non-Ionic..Ideal for degreasing and cleaning electrical parts.

MUCH FASTER CUTTING THAN "CARBON TET"
CAUSES NO RUSTING . . . LEAVES NO FILM
also economical 55 gal. size drum

IMMEDIATE DELIVERY 1 GALLON OR A TANK CAR

CURRAN CORP. Mfg. Chemists LAWRENCE MASS.

120 South Canal St.

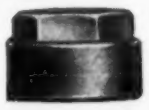
If you write maker identify as IEN-952

WITH GRIPCO LOCK NUTS

APPLIED FAST! *Gripco Lock Nuts* are started on the bolt threads *fast* just like a common nut.

LOCK FAST! When the Gripco deflected threads contact the bolt threads, the nut is seated *fast* and locked with a wrench. Can be renewed and reapplied many times.

NEW GRIPCO "CLINCH" NUTS



Hexagon pilot fits snugly into hexagon hole punched into metal. Pilot is then flattened out under pressure, clinching nut permanently in hexagon hole. Used for additional threading depth on thin metals or for blind assemblies.

GRIPCO LOCK NUT
makes the Bolt-Thread End as secure as the Head End.

GRIPCO PILOT-PROJECTION WELD NUTS
Also *applied fast.* The pilot positions the nut quickly and accurately, and is instantly attached by resistance welding.

GRIPCO COUNTERSINK WELD NUTS
Weld Fast! The slanting "countersink" section catches loose metal particles and slides them down the slanting "countersink" surface away from the threads. No re-threading required!

GRIPCO WELD NUTS *are furnished with either lock or plain threads.*

5866R

GRIP NUT COMPANY
3105 S. Michigan Ave., Chicago, Illinois

If you write maker identify as IEN-953

SIGNALING . . Gyrating spotlight sweeps warning beam in conical path

Source: PYLE-NATIONAL CO.
1348 N. Kostner Ave., Chicago 51, Ill.

Details in Bulletin 5015

A warning beam of bright light, either colored or clear, is swept through a conical path to signal approaching danger by the company's Gyralite gyrating spotlight. Three new models have been added to the line for general industrial use. The three are particularly suited for use in areas where noise level is high and the visual signal is better than horns or bells.

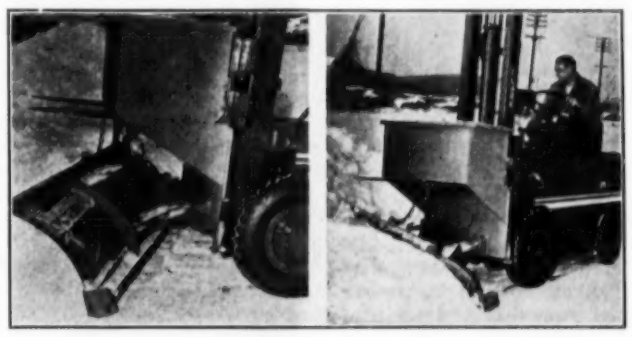
Applications are on overhead cranes, scale cars, transfer cars, trucks to warn workers on or near craneways or roadways of approaching danger. Installation can be made also at stationary ground positions to face toward roadways carrying mobile equipment and thus warn of the presence of hazardous doorways, cross walks, open pits, man holes. Controls can include time switches, pressure switches, float swiches, photoelectric cells, automatic contactors to close the light circuit under predetermined conditions.

Type 17540 mounts a single motor oscillated sealed beam lamp. Type 17340 is a combination assembly with an additional stationary white sealed beam lamp serving as a headlight or back-up light on moving equipment. Type 15100 mounts a stationary lamp in front of an oscillating reflector driven by a motor integral with the unit.

If you write maker identify as IEN-954

SNOW PLOW . . Attachment assembly for pneumatic tired fork trucks

Source: CLARK EQUIPMENT CO.
Battle Creek 49, Mich.



Plows to either side

Pivoted blade, standing 23½ in. in height, is assembled with a counterweight container to be carried on the forks of an industrial truck. The counterweight container can be filled with any type of material to assist in obtaining traction. A compression coil spring in the plow assembly absorbs shock loading. Two legs at the base hold the unit in upright position when it is released from the forks. The plow is designed particularly for snow removal. It also can be used to grade, to back fill and for light yard maintenance.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

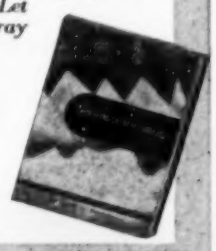
If you write maker identify as IEN-955

FOR EFFECTIVE SPRAYING AT LOWER COST

remember final control is the SPRAY NOZZLE you use!

In design . . . choose the Spray Nozzles that give you proper performance, with exact spray pattern, impact, spray angle and capacity. In application . . . be sure the nozzles as supplied are produced to close tolerances. Metallurgically, make certain the spray nozzles fit your use.

With Spraying Systems you can be sure of spray nozzles to meet all three requirements. *Let Spraying Systems Co. recommend Spray Nozzles to meet your needs best.*



YOUR GUIDE TO SPRAY NOZZLE SELECTION
Spraying Systems Co. Catalog No. 22 . . . 32 pages, with complete performance data. Also write for Catalog 23 . . . Pneumatic Atomizing Nozzles.

SPRAYING SYSTEMS CO.
3208 RANDOLPH STREET • BELLWOOD, ILLINOIS

FOR EFFICIENT SPRAYING MAKE SURE THE NOZZLE IS RIGHT

If you write maker identify as IEN-956

Today's Best Buy is Better Air!

Electro-Mist controls oil mist from thread grinder: Lear, Inc., Grand Rapids.

SAFETY INSURANCE
for high speed cutting and grinding

Electro-Mist eliminates coolant hazards from high speed cutting and grinding. This specially designed unit prevents dispersion of oil mist and smoke and collects both by electronic precipitation. Easy access to all parts . . . without tools. Salvages 2 to 5 gallons coolant daily. Now made in two sizes to meet any capacity requirement. Write today for Engineering Bulletin No. 251.

AAF American Air Filter COMPANY, INC.
335 Central Ave., Louisville 8, Ky.
American Air Filter of Canada, Ltd., Montreal, P. Q.

If you write maker identify as IEN-957

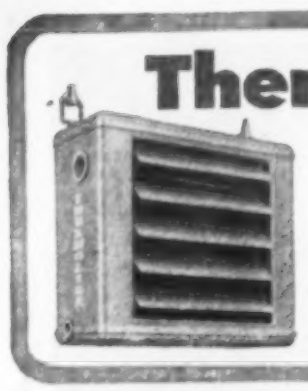
MONARCH makes the complete line of solid industrial tires

THE MONARCH RUBBER COMPANY
201 LINCOLN PARK • HARTVILLE, OHIO

SPECIALISTS IN INDUSTRIAL SOLID TIRES AND MOLDED MECHANICAL RUBBER GOODS

If you write maker identify as IEN-959

Thermolier



Unit Heaters
4 Models
18 Sizes

CHECK THESE PRACTICAL, MONEY-SAVING FEATURES

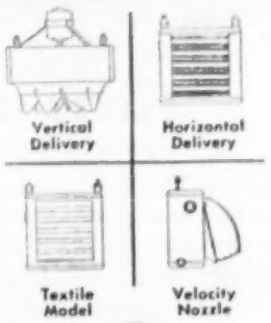
A thermostatic trap, the simplest and least expensive of all traps, is practical because of Thermolier's exclusive cooling leg.

Maximum capacity assured, annoying destructive water hammer eliminated — by built-in pitch of tubes and internal cooling leg which assure continuous drainage of condensate.

Damaging strains caused by expansion and contraction eliminated by "U" type expansion tubes.

Safety and durability assured with leak-proof tube-to-header construction.

Five other important construction features. Write for Catalog.



GRINNELL
WHENEVER PIPING IS INVOLVED
GRINNELL COMPANY, INC.
Providence, R. I.

If you write maker identify as IEN-960

step up production with

STOW flexible shaft MACHINES

These dependable STOW FLEXIBLE SHAFT MACHINES save production time . . . speed up output . . . help lower production costs. Variable Speed Models shown are easily portable . . . cut down operator fatigue and increase on the job efficiency!

Constant Speed Models available. Also complete line of accessories designed to increase the utility of STOW Flexible Shaft Machines!

WRITE TODAY
for your free copy of CATALOG 51

STOW MANUFACTURING CO.
25 Shear St. Binghamton, N. Y.

If you write maker identify as IEN-961

You've heard of
ARMORPLY®...
NOW SEND FOR YOUR
Free Sample

Manufacturers in many fields have already found that Armorply is a real money-saver . . . time-saver . . . product-improver!

This revolutionary metal-faced, waterproof plywood panel is stronger than either wood or metal alone. Faced with almost any metal, of any thickness, with any commercial finish, it is *made to your order*, to meet your specifications, to save you fabrication time and money.

Truck bodies, refrigerators, elevator cabs, tote boxes, and many other products are now being made better at less cost with Armorply. Investigate the possible advantages of using Armorply for your product. Mail coupon today.

UNITED STATES PLYWOOD CORPORATION IEN-1-53
World's Largest Plywood Organization
55 West 44th Street, New York 36, N. Y.

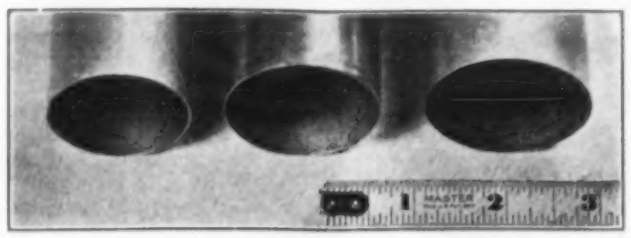
We are interested in Armorply for _____
Please send a free sample and data.

Name _____
Address _____
City _____ State _____

If you write maker identify as IEN-962

TUBE . . Light wall seamless, Monel Metal and stainless, to 2 1/16 in.

Source: SUPERIOR TUBE CO.
1515 Germantown Ave., Norristown, Pa.



Ask for Bulletin 32

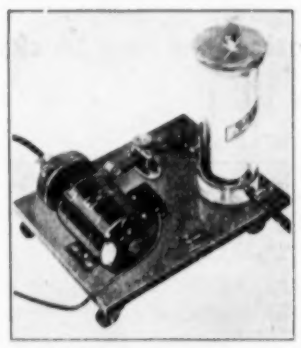
The company announces increase in the size range of its seamless light wall tubing from 1⅜ in. in outside diameter to a new 2 1/16 inches. Sizes start at 0.010 in. in outside diameter and are available in all steel analyses to ⅝ inch. Above this size are three types of stainless, No. 304, 321 and 347. The tube is also supplied in Monel Metal. Wall thickness ranges from 0.006 to 0.085 in. in sizes to ⅞ inch. The new large sizes range from 0.010 to 0.025 inch. Wall tolerance is 10 per cent in all sizes.

The tube is produced with a pickled or standard bright finish in fully annealed, half hard drawn and full hard drawn tempers. Length ranges from 5 to 22 feet.

If you write maker identify as IEN-963

FILTERING . . Cartridge type unit and pump equipped for acids, alkalis

Source: SETHCO
72-76 Willoughby St., Dept. IEN, Brooklyn 1, N. Y.



Holds 1 quart

Model LSI-10 is a new assembly of the company's motor driven pump and cartridge type filter, previously described IEN-12540-51 to handle lubricating liquids. The new design will filter acid and alkaline solutions at rates up to 1.7 gpm. in either continuous or intermittent action.

The assembly consists of a pump made of Type 316 stainless steel, a Lucite body filter with a cartridge element made of processed cotton yarn. The pump is mounted on the shaft of a totally enclosed single phase motor for operation on 110-volt 60-cycle ac. Pump and filter are connected by acid resistant tube and are assembled on a wheel equipped Bakelite base. Filter elements made of Dynel, Orlon, Nylon, spun glass, porous stone or porous carbon can be specified.

Identify as IEN-964

Now you can purchase small amounts, 8 ounce and quart containers, of the combination anti-static and cleaning solution Anstac 2-M, made by Chemical Development Corporation. It has been available only in quantities for use by signs, picture frames, aircraft canopies, display fixtures.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN-965

GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only **$29.90**

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 2645 N. Normandy Ave., Chicago 35, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

If you write maker identify as IEN-966

. . . to help you find the right packing in a hurry

Why take chances with "any old packing" and run the risk of shutdowns and the expense of frequent replacements?

This handy new "packing selector" tells you at a glance the *right* Johns-Manville packing or gasket for practically any power plant application. Its recommendations are based on the experience of J-M engineers in solving packing problems and lowering packing costs in thousands of plants.

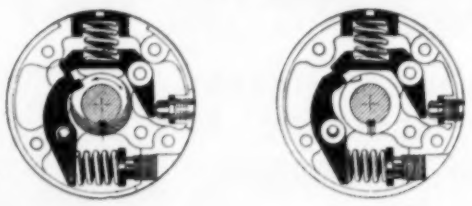
For your free copy, write Johns-Manville, Box 60, New York 16, N. Y. Ask for "Packings for the Power Plant."

JM Johns-Manville PACKINGS & GASKETS

If you write maker identify as IEN-967

OVERLOAD RELEASE CLUTCH

A positive safeguard against damage due to overloading



Spring backed latch and trigger on clutch housing operate with stepped collar on the driving shaft.

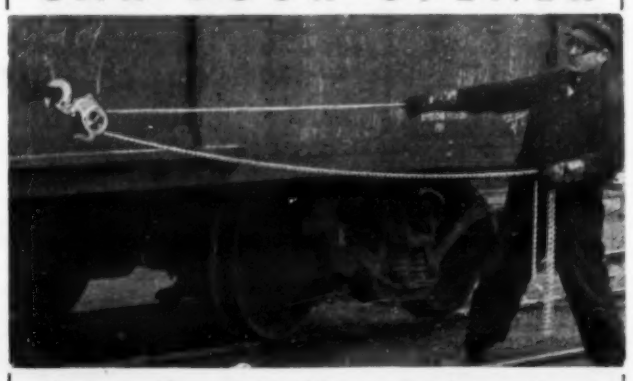
Type C—One way drive, manual reset
Type CFC—Adds flexible coupling
Type CR—Reversible drive, manual reset
Type CS—Adds cutoff switch
Type CAS—Adds automatic reset
Type LR—Lateral release, rotating
Type LRFC—Adds flexible coupling
Type LS—Lateral release, stationary
Shaft bore ¼ to 7 inches

Illustrated details in 16-page Bulletin I.E.N. 52

OVERLOAD RELEASE CLUTCH CO., Inc.
1 Clinton Street • Newark 2, N. J.

If you write maker identify as IEN-968

NOLAN ONE-MAN CAR DOOR OPENER



Opens Doors in 20 seconds or less!

The Nolan Car Door Opener gives one man a tremendous amount of pulling energy, to get the most stubborn, hard-rolling door wide open in a hurry!

No gangs needed. No mangled limbs or loss of life. A few quick pulls on anchor chain gets any door open in a jiffy. The NOLAN saves its low initial cost in first hour of operation.
New safety and efficiency features now make the Nolan 1-Man Car Door Opener a more necessary labor-saving, money-saving help than ever before.

MANY THOUSANDS IN CONSTANT DAILY USE! FREE LITERATURE.

Order one or more NOLAN Model-H Car Door Openers now. Catalog on request.

$29.50 F.O.B. Bowerston

THE NOLAN COMPANY • 114-C Pennsylvania St., Bowerston, Ohio

If you write maker identify as IEN - 969

take a CLOSER LOOK at...

CLASSIFIED SECTION

TUBING—Steel, Stainless

(see also Tubing, Seamless; Tubing, Welded; Tubing, Alloy; Tubing, Carbon Steel; etc.)

BABCOCK & WILCOX COMPANY, THE
TUBULAR PRODUCTS DIVISION
Beaver Falls, Pa.

for:

- Seamless and Welded, Pressure and Mechanical, from one source.
- Full range of austenitic and ferritic stainless analyses.
- Sizes up to 8⅝" O.D.
- Wide choice of finishes.
- Special sizes, gauges, ends, shapes, lengths.
- Distributors in principal cities.

Write for new Technical Bulletin No. 1

THE BABCOCK & WILCOX COMPANY
TUBULAR PRODUCTS DIVISION

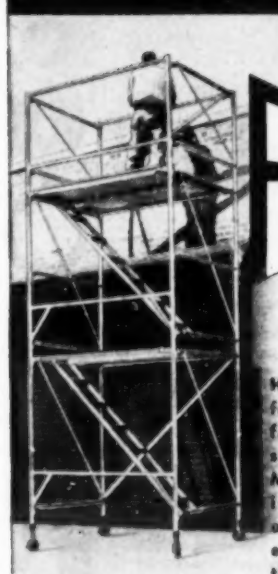
General Offices & Plants
Beaver Falls, Pa.—Seamless Tubing; Welded Stainless Steel Tubing. Alliance, Ohio—Welded Carbon Steel Tubing.

B&W STAINLESS and WELDED TUBES

TA-1656-G

If you write maker identify as IEN - 970

No Acrobatics! No Flip-Flop!



with the FOLD-A-WAY TRADE MARK **SCAFFOLD**

HERE'S WHY: For erection, the end frames of this new aluminum scaffold swing open *sideways* while the scaffold is in *standing* position. Maximum swing of any component is 90 degrees, so the erector is always *within* the base area. With exclusive design features such as these, FOLD-A-WAY Scaffolds bring you new safety, ease of handling and speed. One man erects the base section in *less than a minute.*

Write for illustrated Bulletin ASF-1.

Safer, the FOLD-A-WAY Scaffold stands freely and will not "fold under" during erection; upper folding sections stand with only two legs in position. Superior construction features include coped and *full-welded* joints, LOKT-RING adjustable legs with casters that lock at both wheel and swivel by one lever action. Standard Sectional Aluminum Rolling Scaffold may be used on FOLD-A-WAY base. UL approved.

LOKT-RING LEG
Push down and turn ring to lock leg securely; release ring for quick, safe height adjustment. *No danger of pinched fingers.*

Aluminum Sectional Ladder Scaffolds are extremely mobile. 24" width permits use in restricted areas. 6', 8' and 10' spans; ladders 4'3", 5'8" and 6'1" high slip together easily for desired height. UL approved. Write for Bulletin PSS-20 (R).

WHATEVER THE NEED . . .
When it comes to ladders and scaffolding, come to P. S.

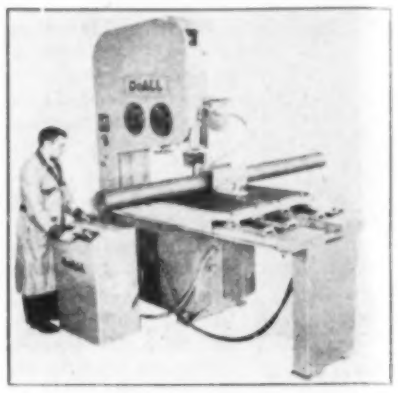
GOLD MEDAL LADDERS & SCAFFOLDING — *for Greater Safety . . . Efficiency . . . Economy*

THE PATENT SCAFFOLDING CO., Inc.
38-21 12th Street Dept. IEN Long Island City 1, N. Y.
West Coast Plant: 6931 Stanford Ave., Los Angeles, Calif.

If you write maker identify as IEN - 972

SAWING . . Bandsaw machine presents blade 90 deg. to wheel face

Source: DOALL CO.
252-56 N. Laurel Ave., Des Plaines, Ill.



Hydraulic table feed

The work table in this new Model CO-36 machine measures 40 by 48 inches. It is mounted on rollers to move from left to right as the machine is shown in the illustration. Ball bearing guides turn the saw blade 90 deg. so the teeth face to the right. The vise, shown in the illustration for work holding, is available to specification to apply the machine particularly in cut-off operations on either ferrous or nonferrous metal. Work thickness under the blade guide is 15½ in. and under the column is 9½ inches. The table will handle work to one ton.

Hydraulic controls for the table movement and for the main drive motor center in a separate control assembly so the operator can stand in the most convenient position. Speed range is 40 to 10,000 fpm. by means of a 10-hp. variable speed drive and a three-speed transmission. The machine will take saw blades to 1¼ in. in width. It also can be employed with the toothless friction blade. The guides can be changed to mount the blade in conventional manner in which case the table is moved and locked in a neutral position.

If you write maker identify as IEN - 973

SEPARATING . . Coil and filter to dry and to clean compressed air

Source: HANKINSON CORP.
184 Biltmore Bldg., Pittsburgh 16, Pa.

Instrument quality air

Clean, dry air suitable for use in instrument operating lines, is produced by this new Model B-30-D assembly of the company's Condensifilter, previously described IEN-234-52. Rating is 30 cfm. at 100 pounds. A combination of cooling action to condense out the moisture and a wire-cloth filter cartridge is employed.

Compressed air enters through a pipe connection at the bottom of the assembly to move upward around a coil in which cold water is circulated from a shop source. Dehydrated air continues upward to pass through the filter cartridge and issue from the pipe connection at the top of the housing. Moisture collects in the bottom of the housing and is discharged at intervals by a trap.

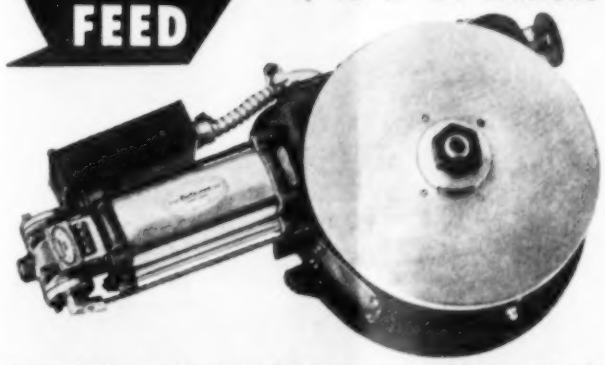
No service attention is required for a considerable period of action. When the filter cartridge becomes contaminated it can be removed and replaced with a new one. This is required about twice a year under normal conditions. Overall dimensions are about 9 by 15 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 974

Electrically-Controlled Air-Powered DIAL FEED

Adjustable for 4, 6, 8, 12 or 24 stations



THE Bellows air-powered Rotary Feed Table is a complete "packaged" unit with all valves and valve operating controls built in. The built-in Electroaire Valve simplifies synchronized operation with drill presses, punch presses, arbor presses, etc. 10" diameter table top is geared to provide 4, 6, 8, 12 or 24 stations. Table top may be drilled, tapped, or otherwise machined for mounting jigs, fixtures or even larger size table tops.

• ***Write today for Bulletin T-80.*** *Address Dept. IEN-153*

1198

The Bellows Co.
Akron 9, Ohio

If you write maker identify as IEN - 975

FLOORS IN BAD SHAPE?

Fix Them Fast With

SPEED PATCH

without halting traffic

World's finest fastest floor fixer! Simply patch holes and truck over them immediately, no waiting. Ready-mixed. Millions of pounds used regularly by industry. Write for details.

Easy To Apply

Any Handyman Can Do It

ROCK-TRED Corporation
Manufacturers of a Complete Line of Building Maintenance Materials
7440-7450 North St. Louis Avenue • Skokie, Illinois
In Canada: Rock-Tred Corporation (Canada) Limited, Toronto 3

If you write maker identify as IEN - 976

Cramer TIMING DEVICES

Better than .2 of 1% accuracy

new

MODEL ET TIME TOTALIZER

For accurate timing operations in industrial laboratories, or for measurement and control processes in chemical or metal fields.

- Positive action clutch with differential gear prevents slippage and overrun.
- High torque motor.
- Compact size.
- Models available to meet exacting military specifications.

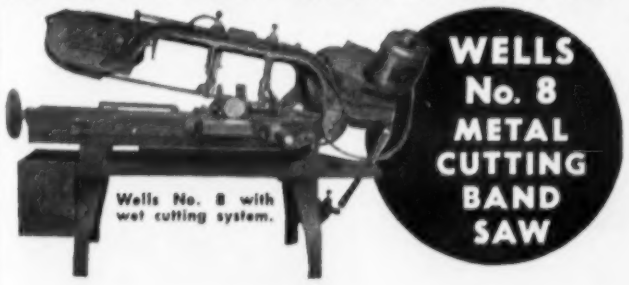
Write for bulletin 690

the R. W. CRAMER CO., Inc.
BOX 16, CENTERBROOK, CONN.

5CR53

If you write maker identify as IEN - 977

On cut-off jobs . . . *This is the saw that* SAVES TIME . . . MONEY . . . MANPOWER



Wells No. 8 with wet cutting system.

Whether it's for production, general utility or both, the Wells No. 8 is an investment that will pay for itself many times over in savings of time, money and manpower. These savings can mean a lot in any shop . . . why not find out what they can mean to you. The Wells No. 8 has a capacity 8" x 16", rectangular, 8" diam., rounds. It is powered by a heavy duty ½ H.P. motor. Other sizes also available. See your Wells Dealer for further information or write for literature.

Wells

Products by Wells are Practical

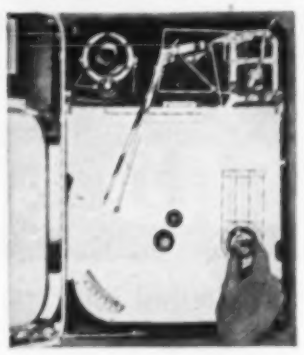
METAL CUTTING BAND SAWS

WELLS MANUFACTURING CORPORATION
1111 MADISON ST., THREE RIVERS, MICH.

If you write maker identify as **IEN - 978**

COMPLETE EASE OF OPERATION

in a controller



Any control action easily reproduced.

The Bristol Series 500 Air-Operated Controller permits you to do it by *merely setting a dial!*

This saves hours of shutdown.

Easiest to service, too. Simple design, fewest parts, close-tolerance manufacturing—make the instrument interchangeable throughout. One simple adjustment puts it back in exact calibration after complete disassembly and reassembly.

Five types for controlling temperature, flow, pressure, liquid level, humidity, pH. Write for Bulletin 120. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn.

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

If you write maker identify as **IEN - 979**

Will You Have Enough GAS this Winter?

THIS OVEN DESIGNED FOR GAS...
BUT IT'S FIRED WITH OIL VAPOFIER

The S.O.S. Company, in Chicago, has insured production against losses due to seasonal gas curtailment by installing Vapofier as gas standby. Change-over to and from gas is made without loss of flame at the burners in a matter of seconds. The same piping, burners, automatic controls and safety devices are utilized.

Capacities from 70,000 to 4,000,000 B.T.U.'s per hour

Should your processing be annealing, galvanizing, heat treating, glass manufacturing, industrial drying, paint, core or bread baking, there's a Vapofier to fit your needs.

Do away with Gas Shortages *this winter*. Send for FREE booklet "Make Your Own Gas with Vapofier."

VAPOFIER CORP., 10326 S. Throop St., Chicago 43, Ill.

If you write maker identify as **IEN - 980**

HOLDS THE EDGE

DESTACO

Photos: Courtesy Holley Ski Co. Detroit, Michigan

Skiers know proper edging is most important for smooth slalom maneuvers. In production, precision tooling is necessary to obtain quality products. In the manufacturing of Plasti-Glass Skis the Holley Ski Company use De-Sta-Co's Model 620 Plunger Clamps to provide proper pressure during the slotting of the skis at a 22½ degree angle to allow for a patented moulded edge. Fifteen De-Sta-Co Model 110-C Toggle Clamps with Pressure-Matic adapters provide the necessary holding force to the welded angle plates which hold the ski in place during the cementing of the spring steel edges. Completely retractable the clamps allow easy insertion and removal of the skis from the drying fixture.

There's a De-Sta-Co Toggle Clamp engineered for your work-holding problems in assembly, welding, bonding, machining or inspection. Select from over 40 fixture and portable models. Positive holding pressures up to 4000 pounds. Write today for a copy of the De-Sta-Co catalog describing available stationary and portable toggle clamps.

DESTACO DETROIT STAMPING COMPANY
342 Midland Ave. • Detroit 3, Mich.

If you write maker identify as **IEN - 981**

TRUCK . . Power lift fork design stacks 48 in. load from 10 ft. aisle

Source: MERCURY MFG. CO.
4132 S. Halsted St., Chicago 9, Ill.

Short turning radius

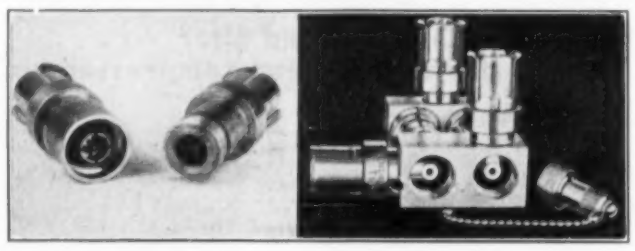
Model A-3444 is a new 1½-ton battery powered motor driven truck in the company's Jeep line. It features a sufficiently short turning radius in its 117-in. overall length and 44-in. wheel base so it can stack loads measuring 48 in. in length when operating in a 10-ft. aisle. Overall width is 36 inches. Collapsed height is 70 in. and maximum load elevation is 90 in. in the company's standard construction.

The truck operates at a little under 5 mph. free, 4¼ mph. when carrying a capacity load. It employs a double reduction drive assembly, compensating caster type steering axle, automotive steering control, foot control for travel acceleration. The hydraulic hoist equipment is the company's patented balanced cross suspension design for the load.

If you write maker identify as **IEN - 982**

TESTING . . Coaxial adaptors for high frequency measurement setups

Source: GENERAL RADIO CO.
273-77 Massachusetts Ave., Cambridge 39, Mass.



Illustrated technical data on request

Eight adaptors are included in a new Type-874 line to connect measuring equipment, using the same type of coaxial connectors, to other pieces using any of the common high frequency coaxial connectors such as Type N, Type C, Type BNC and Type UHF. Electrical characteristics are excellent. The new units can be used when measurements are to be made on equipment fitted with military type connectors. Both female and male designs are included. List prices range from $4 to $6.50, depending upon the design.

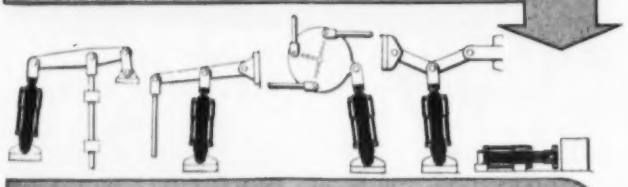
Identify as **IEN - 983**

If you have a job to keep insulating oil clean in a widely spread assortment of transformers, circuit breakers, switches, you can purchase a compact wheel mounted oil purifier as Union Carbide did recently from Honan-Crane Corporation. It measures 8 by 4 by 6 feet. It will handle 300 gph. of contaminated oil. It is moved from one piece of equipment to the next for the oil cleaning operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 984**

FOR THE 1001 JOBS



WHERE CYLINDER POWER IS BEST TO USE . . .

HANNA CYLINDERS ARE THE *FINEST* YOU CAN CHOOSE!

FREE! "27 Ways to Use Cylinder Power." Send for the New "Cylinder Power in Action" Bulletin!

Hanna Engineering Works
HYDRAULIC AND PNEUMATIC EQUIPMENT CYLINDERS VALVES RIVETERS
1748 Elston Avenue • Chicago 22, Illinois

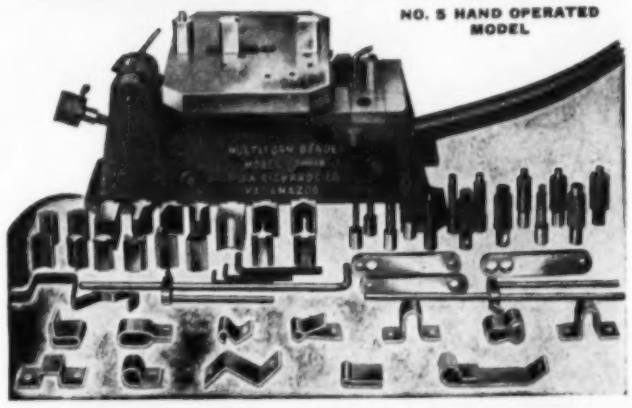
If you write maker identify as **IEN - 985**

THE FAMOUS MULTIFORM BENDER CUTTER

Produces Dithout Special Tooling • Saves Die Costs Saves on Expensive Presses

The illustration at the left shows just a few pieces produced on our famous Multiform Bender-Cutter. This efficient machine is useful in all lines of trade, Spring Plants, Radio, and Electrical Equipment Manufacturers, complete with tooling for bending material up to ⅛" x 1½".

NO. 5 HAND OPERATED MODEL



FIVE-IN-ONE-TOOL — ALSO LARGER MODELS

Air Operated Models in this and Larger Sizes Available

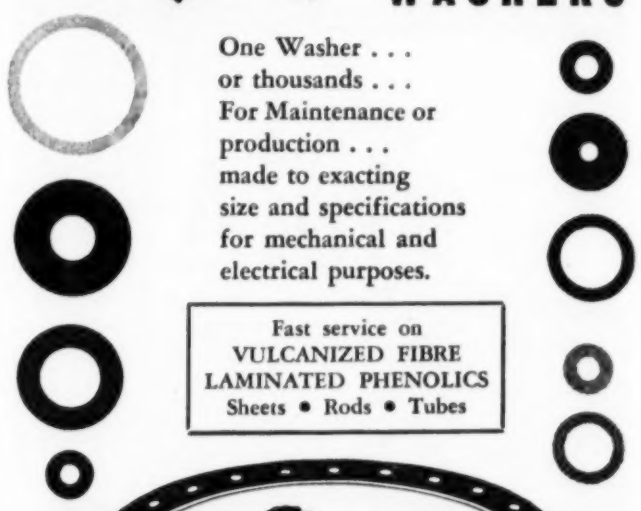
IT BENDS FLAT AND ROUND STOCK INTO ANY SHAPES, CUTS AND PUNCHES FLAT STOCK

J. A. RICHARDS CO. 907 NORTH PITCHER ST. KALAMAZOO 60F, MICH.

If you write maker identify as **IEN - 986**

FAST SERVICE ANYWHERE

ON FIBRE WASHERS



One Washer . . .
or thousands . . .
For Maintenance or production . . .
made to exacting size and specifications for mechanical and electrical purposes.

Fast service on
VULCANIZED FIBRE
LAMINATED PHENOLICS
Sheets • Rods • Tubes

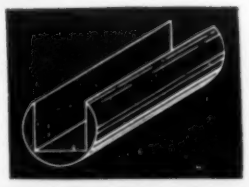
PENN FIBRE & SPECIALTY CO.
2026 East Westmoreland Street
Phone REgent 9-4862
PHILADELPHIA 34, PA.

If you write maker identify as **IEN - 987**

An Easy Method of Installing Tool Bits In Boring Bars, Tool Holders and Cutter Heads

Lower TOOLING COSTS WITH SLOTTED SLEEVES

No longer is it necessary to spend hours in filing square or rectangular holes when installing tool bits in boring bars, tool holders and cutter heads. With "Novi" Slotted Sleeves, you just ream a hole to fit the sleeve. Then drill and tap two more holes—one to hold the tool in place and the other for adjustment. All done in a matter of minutes!



Made in sizes for tool bits 3/16" to 1" wide and 1" to 4" long

Write for Literature

Some Territories Still Open to Jobbers

NOVI TOOL & MACHINE CO.
43043 Grand River Novi, Mich.

Novi SLOTTED SLEEVES

If you write maker identify as **IEN - 988**

LIGHTNING-FAST ELECTROPUNCH

PRODUCES UP TO **10,000** PIECES PER HR.

This versatile low cost electric impact hammer produces up to 10,000 pieces per hour using automatic switching — as high as 5,000 pieces per hour with hand or foot switching. Ideal for steel stamping, inspection or identification marks on small defense parts.

ELECTROPUNCH is portable — plugs in to any 115V A. C. outlet. Lightest model (illustrated) sells for only $90.75.

ELECTROPUNCH *quickly pays for itself. Investigate its possible applications in your plant now!*

Write for descriptive folder

BLACK & WEBSTER, INC.
Dept. 17, 445 Watertown St., Newton 58, Mass.
Phone: Frank Webster Bigelow 4-6370

If you write maker identify as **IEN - 989**

You can change these Smith TIPS in 6 Seconds

No wrench necessary. Fingers do the job. Tip changes now take only ¼ the time. Fast line-up of tip. Fast change from welding to cutting. Seal stays tight even if tip is battered or nicked. Cutting Assembly can be attached as quickly as tip. New "FLO-TROL" feature eliminates reverse flow of gas — prevents burned out seats. Another feature permits rotating tip while flame is burning. (Heavy Duty Torch Body and Cutting Assembly, shown above, carries Lifelong guarantee.) Write us today.

SMITH WELDING EQUIPMENT CORP.
Dept. IEN-12
2633 4th Street, S. E. • Minneapolis 14, Minn.

If you write maker identify as **IEN - 990**

Dermatitis costs Industry $100,000,000 per year

yet its answer is as simple as this

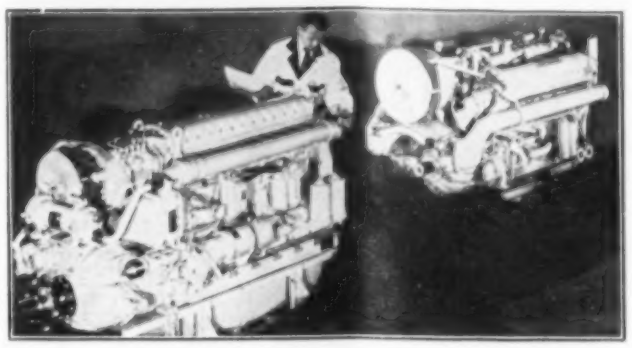
Where irritation and defatting of the skin occur from frequent contact with solvents, and oils, chemicals, dust, paint spray, etc. . . . SKIN-COTE Creams provide an invisible film over the skin, setting up a barrier to the irritant material. . . . Also important to you, is the fact that SKIN-COTE Creams are superfatted with U.S.P. grade oils and lanolin, to help restore any loss of the natural skin oils and fats . . . As a result skin remains fresh, vibrant and alive—you will find that the answer to Industrial Dermatitis is just as simple as this. . . . Send for our Application Chart—it is helpful in analyzing any problem of this nature . . . also indicate if you want our 144 page catalog titled: "Everything for Safety."

The Boyer-Campbell Company
6546 St. Antoine St. *Safety division* Detroit 2, Mich.

If you write maker identify as **IEN - 991**

ENGINES . . Lightweight diesels, turbo charged, rate 300 and 600 bhp.

Source: PACKARD MOTOR CAR CO.
1578-82 E. Grand Blvd., Detroit 32, Mich.



Also to drive large trucks, buses and heavy vehicles

Series 142 designates a new line of high speed water cooled four-cycle diesel engines, initially available in two models for marine use. One is a 6-cylinder assembly rating 300 bhp. at 2,000 rpm. The other is a 60-deg. V-12 rating 600 bhp. at the same speed. Weights are 2,200 lb. and 3,250 lb. for specific weights of 7.34 and 5.41 lb. per bhp.

Construction is essentially in aluminum with integral cylinder block and crank case with alloy steel precision cast cylinderical heads that fit within bores at the top of the block. Each head carries four valves, two intake and two exhaust. Wet type cylinder liners are welded to the heads to make integral assemblies that are quickly replaceable.

The exhaust valves are sodium cooled. All valves are Stellite faced and operate in Stellite faced seats. The pistons are aluminum alloy. The 7-bearing crankshaft is an alloy steel drop forging counterweighted and balanced. It mounts a viscous fluid damper. The turbo charger, mounted at the front of the engine, is fitted with an air cleaner. Exhaust gases are directed to the turbine end of the supercharger. Pressure lubrication is provided to all of the bearings and other major points. Cylinder wall and wrist pin lubrication is by splash feed. A filter and oil cooler are standard equipment.

If you write maker identify as **IEN - 992**

SWITCH . . Molded plastic housing for the Levolier light circuit switch

Source: McGILL MFG. CO.
100 N. Lafayette St., Valparaiso, Ind.

Pull chain operates through lever

Model 41 in the company's Levolier line of light circuit switches now includes a one piece molded plastic housing. It is designed for removal, after loosening a single nut, to expose the terminal posts for quick wiring. The switch is rated 6 amp. on 110-volt ac. It is "T" rated by Underwriters' Laboratories, Inc. It is suited for use in incandescent and fluorescent lighting control and to operate small motors.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 993**

IT'S 75 to 1

Abart has the EXACT SPEED REDUCER for your application!

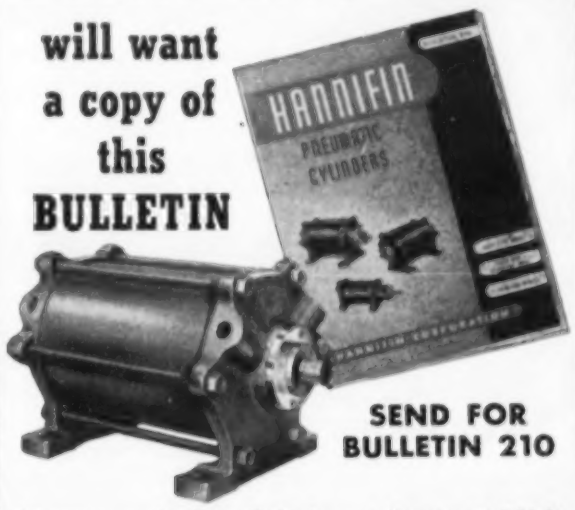
Choose the ABART Speed Reducer you need from the complete line of over 75 different ABART models—spur, worm, and combination gear. Ratings from 1/50 to 168 hp., with ratios up to 10,000 to 1. ABART Speed Reducers help make the products you design and manufacture—better!

Send for handy pocket-size ABART Catalog today!

Abart GEAR & MACHINE CO.
WEST 16th STREET • CHICAGO 50, ILLINOIS
Mfrs. of Gears, Speed Reducers and Gearmotors

If you write maker identify as **IEN - 994**

EVERY ENGINEER will want a copy of this BULLETIN



SEND FOR BULLETIN 210

It's easy to get the right cylinder for even the most special jobs when you use Hannifin's big handbook on PNEUMATIC CYLINDERS. 49 pages of helpful specification and engineering data, complete with diagrams and dimensions. The Hannifin line is complete! 6 standard mountings . . . many combination mountings . . . adjustable cushions at either or both ends . . . 2 types of pistons . . . bores to 16". Exclusive construction features assure trouble-free, efficient operation. Send for Bulletin 210. Hannifin also builds custom cylinders in quantity to special design. *Bring us your cylinder problems.*

HANNIFIN
1107 S. Kilbourn Ave., Chicago 24, Ill.

If you write maker identify as **IEN - 995**

Yes, one false note can ruin years of hard-earned good will. That's why Kester stresses consistency . . . makes sure the solder alloy and especially the flux formula never varies. Kester never experiments at the expense of the solder user!

FREE: *Technical Manual*
Write for your copy of "SOLDER and Soldering Technique."

KESTER SOLDER COMPANY
4211 Wrightwood Avenue • Chicago 39, Illinois
Newark 5, New Jersey • Brantford, Canada

If you write maker identify as **IEN - 996**

Only STARRETT offers this double feature in micrometer design! You can choose the micrometer that best suits your needs — either with *ratchet stop* or *friction thimbles.* Both give uniform contact pressure on every measurement — insuring the same accuracy every time independent of feel. Both also provide "direct feel" — a plus feature desired by many mechanics for "feeling" certain measurements.

Ratchet stop micrometers have a convenient ratchet stop at the end of the micrometer while the thimble itself is used for "direct feel". *Friction thimble micrometers* have a friction control mechanism built into the upper section of the thimble "right under your thumb"; permitting easy one-hand operation; lower section of the thimble is integral with the spindle for "direct feel" measurements.

For consistent accuracy in precision measuring, use Starrett *Satin Chrome* Micrometers . . . they're ideal for all inspection and quality control applications. Your industrial distributor will give you prompt, dependable, quality service.

Starrett
THE L. S. STARRETT COMPANY
Athol, Massachusetts, U.S.A.
SINCE 1880 WORLD'S GREATEST TOOLMAKERS
Buy through your INDUSTRIAL DISTRIBUTOR
Prompt delivery. Dependable service. Quality products.

If you write maker identify as IEN - 997

If you write maker identify as IEN - 998

Designed for **every** drilling need

(particularly the need to cut *production* costs)

new WALKER-TURNER

LIGHT-HEAVYWEIGHT

DRILL PRESSES

WALKER-TURNER
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

DRILL PRESSES - HAND AND POWER FEED · RADIAL DRILLS
WOOD AND METAL CUTTING BAND SAWS · ELTING ARBOR SAWS
RADIAL SAWS · JIG SAWS · LATHES · SPINDLE SHAPERS
JOINTERS · BELT AND DISC SURFACERS · FLEXIBLE SHAFT MACHINES

For Complete Information about Walker-Turner Drill Presses, write your name and address in the space below, indicating type of Drill (15", 20", Radial) in which you are interested.

. . . . *Use this space* . . . . .

to write for full details and specifications.
Walker-Turner Division, Kearney & Trecker Corp.
Dept. IE-1, Plainfield, N. J.
(Please write your name and address in margin of page)

If you write maker identify as IEN - 1000

TRUCK . . Motor driven tractor designed for operator to walk or ride

Source: MOTO-TRUC CO.
1987 E. 59th St., Cleveland 3, Ohio

To pull several trailers

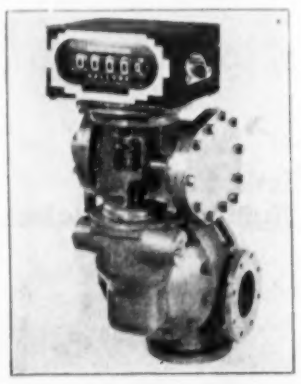
New tractor in the company's line of battery powered motor driven trucks is available in two widths measuring 27 and 31 in. to take a 12 or an 18-volt battery. In both cases overall length is 48 inches. Feature of the design is that the operator can either walk or ride. He has two speeds in the former case to a maximum of 3½ miles per hour. He can increase this to 4½ mph. when he is in riding position as shown to the right in the illustration.

Controls center at the steering handle. The brake is also operated by the handle when it is released to return to its normal upright position. This movement opens the motor circuit and sets the brake. The truck rides on cushioned rubber tires. The operator can enter from either side to stand between front and rear guards.

If you write maker identify as IEN - 1001

METER . . Registers liquid flow, stainless steel to handle corrosive fluids

Source: ROCKWELL MFG. CO.
624 N. Lexington Ave., Pittsburgh 21, Pa



For foods, chemicals

New No. 2BC stainless steel assembly, in the company's Rotocycle meter line, operates on the principal of rotary displacement to register liquid flow at rates to 100 gpm. and working pressure to 125 pounds. Remote registration can be specified to transfer the meter reading to a central control station at some distance from the point of meter installation. A quantity control register with a built-in electric switch can be specified to operate after a predetermined volume has passed through the meter.

The assembly weighs 120 lb. without registering accessories. Companion flanges, for 1½ to 3-in. pipe, are available to specification. The meter reads in gallons, barrels, liters, pounds or imperial gallons. The register can be specified as non-reset, small reset, large reset, and total printing.

Identify as IEN - 1002

Perhaps you have a use for magnesium powder sufficiently fine to pass a 400 mesh screen. We have word that Goldwynne Chemicals Corporation has developed a process to produce it.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1003

Big Shaper Performance Small Shaper Price

The SHELDON 12" Back-Geared Shaper is neither too big, nor too small. It is just right for most shaper work in most tool rooms and shops.

In weight, design features, capacity and performance, it is a "big shaper." In price, operating cost and floor space, it resembles a "small shaper."

It is the logical 1st shaper for the small shop and a cost-cutting tool in multiple installations in large plants.

Write for Catalog.

SHELDON
CHICAGO U. S. A.
SHELDON MACHINE CO., Inc., 4028 N. Knox Ave., Chicago 41, Illinois

If you write maker identify as IEN - 1004

SAFETY SOCKET SCREW COMPANY
6508 Avondale Avenue, Chicago 31, Illinois

If you write maker identify as IEN - 1005

Hills-McCanna Valves are suitable for air, water, gases, volatile and viscous substances, semi-solids, etc. Hand-wheel or lever operated or choice of automatic or remote operators. Choice of 14 diaphragm materials; 49 body materials. Sizes ⅜" to 14". Write for catalog.

HILLS-McCANNA CO.
2347 W. Nelson Street • Chicago 18, Illinois

HILLS-McCANNA
saunders type diaphragm valves
Also manufacturers of — Proportioning Pumps
Force-Feed Lubricators • Magnesium Alloy Castings

If you write maker identify as IEN - 1006

at Cleveland Builders Supply

These 7,200 lb. concrete "Dox Planks" move safely on a Robbins and Myers "Freeway"* system. Two 8,000 lb. capacity R & M Twin Hook Hoists on American Monorail Co. track may help solve your "traffic jams." Write today for your copy of Bulletin 875, describing these versatile hoists.

**Materials handling on a separate overhead level.*

TAKE IT UP WITH
ROBBINS & MYERS INC
HOIST AND CRANE DIVISION, SPRINGFIELD 99, OHIO

If you write maker identify as IEN - 1007

Here's the money-saving way to speed car handling

YOU can move cars at a moment's notice when you have a Link-Belt Car Spotter. One man, using a Link-Belt Car Spotter with motor-driven capstan, can easily move up to six loaded railroad cars at a time. Faster loading and unloading minimizes demurrage charges. Link-Belt Car Spotters are built in two sizes with 5 or 10 hp, integral or separate motors, stationary or portable.

Link-Belt's Book No. 1992-A describes complete line of car spotters and drum-type pullers.

Get this Book

LINK-BELT CAR SPOTTER

12 H99

LINK-BELT COMPANY
Dept. 21, 307 N. Michigan Ave., Chicago 1, Ill.

If you write maker identify as IEN - 1008

Only Genuine RIGID PIPE WRENCHES

Guarantee you against wrench housing trouble and expense

Look for the wrench with that guarantee label to make sure you get the extra-easy work and extra durability that have made RIGID the world's most popular wrench.

Only RIGID assures you a hookjaw that always rides freely in the housing; adjusting nut always spins easily to pipe size. Replaceable alloy jaws won't slip or lock on pipe. Handy pipe scale on hookjaw. Safe stout comfort-grip I-beam handle.

Save work and money—buy genuine RIGIDs at your Supply House.

See us at Booth 912, Plant Maintenance Show! Cleveland, January 19–22

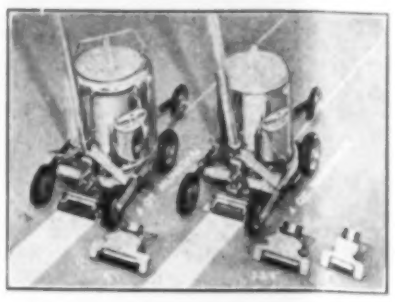
THE RIDGE TOOL COMPANY, ELYRIA, OHIO

RIGID Work-Saver Pipe Tools

If you write maker identify as IEN - 1010

MARKING . . Traffic line machine feeds paint to spreader by gravity

Source: S. B. BEUGLER
3665-69 Tracy St., Los Angeles 39, Calif.



Free from drip

New design of the company's Municipal machine now takes a 4-in. spreader head. It mounts this head back of the rear wheels so a new stripe can be started at the edge of a fresh line without getting the wheels in the paint. Feed is by gravity from a 6-qt. container. The head assembly is removable for interchangeable application of narrower units. The improved machine is a companion unit to the 4-qt. Warehouse unit. Both employ a guide wheel at the front to follow an initial line laid down previously. List price for the Municipal unit is $98.50.

If you write maker identify as IEN - 1011

SOLDERING . . Tin lead base in cored and solid wire forms

Source: AMERICAN SOLDER & FLUX CO.
Norris St. & Trenton Ave., Philadelphia 25, Pa.

Available from stock

New solder, particularly for aluminum, has been added to the company's line of cored and solid solders. The new material is available in diameters between 0.05 and 0.092 inch. A separate flux can be supplied for use with the solid material. The cored solder is particularly designed for automatic soldering as in assembling aluminum bases on electric lamps.

If you write maker identify as IEN - 1012

MIRROR . . Rear vision unit for a truck, adjusts universally

Source: KAMPA CO.
5713-17 S. 11th Ave., Minneapolis 17, Minn

No blind spots

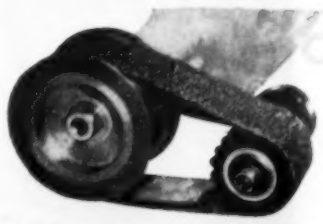
Driv-Eez is a new rear vision mirror that mounts on a bracket by means of a ball and socket joint on its rear face. The double arm bracket can be moved in and out. It also hinges on its anchoring feet. The mirror can be turned and tilted and locked securely in adjusted position. If the mirror should be struck, the bracket will hinge on its supports so nothing will be broken. It can then be returned to its original position. Three mirror heights are 12, 14 and 16 inches. Maximum horizontal bracket extension is 20 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1013

A PAID NEWS ADVERTISEMENT BY THE CARBORUNDUM CO

PORTABLE GRINDING...New "Port-A-Belt" Attachments designed to reach additional hard-to-get-at spots



Two new models of the versatile "Port-A-Belt" Grinding Attachment by CARBORUNDUM now make it possible to grind additional surfaces normally difficult to reach with portable equipment.

The two new models mount the "61" Contact Wheel on the extended arm, and the idler pulley on the tool spindle. Thus they complement the present two models where the "61" serrated-surface wheel is on the tool shaft. Equip your shop with all four efficient, low-cost attachments—enjoy the unique versatility and economy of belt grinding on such jobs as small-radius die and mold areas, and all kinds of contours, welds, edges, etc.

All four models fit nearly all standard make horizontal portable grinders—air or electric. They offer the high cutting rate and long belt life made possible by the serrated surface of the "61" Contact Wheel. They are light, easy to handle. They do not bounce or chatter.

Call your CARBORUNDUM distributor for full information—or write us at Dept. IEN 82-35.

"Carborundum" and "Port-A-Belt" are trademarks of The Carborundum Company, Niagara Falls, New York

82-35

THE CARBORUNDUM COMPANY
Niagara Falls, New York

If you write maker identify as IEN - 1014

THIS "BLOW HARD" MAKES A QUICK CLEAN-UP

Put a CLEMENTS-CADILLAC blower-suction cleaner into action and presto! — Dirt, Dust, and Grit vanish from every crevice of machinery and equipment. Then you can do some bragging — about this fast, easy, economical way to clean.

Eligible under C. M. P. regulations.

SAVE TIME • MONEY PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS CADILLAC

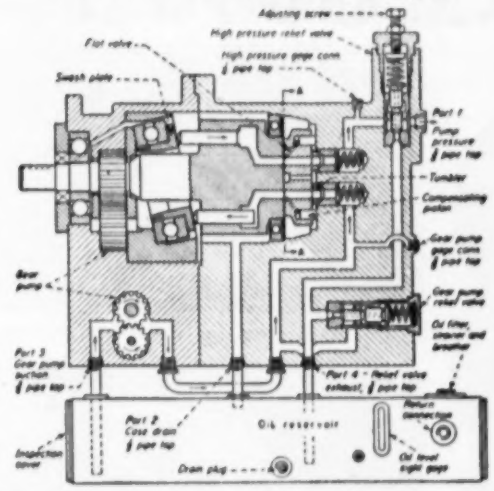
CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

If you write maker identify as IEN - 1015

HEAVY DUTY HYDRAULIC POWER PUMPS

Pressures to 3000 & 5000 psi



The Oilgear Company announces three new "Fluid Power" heavy-duty constant delivery axial piston pumps. Similar components have been tested and proven in more than 100,000 installations without a single failure on record. Features of these fluid power generators are: patented balanced small flat valves with controlled oil film between working surfaces; patented small one piece rolling pistons; patented quiet reverse flow relief valves; 100% supercharge that minimizes oil compression, prevents air entry and assures quieter operation. These units in pressures up to 3000 and 5000 psi are especially suited to heavy duty pushing, pulling, lifting, lowering and maintaining high static loads on large clamping rams; for use in the iron, steel, metal working, plastic, automotive, rubber, printing, lumber and textile industries. For illustrated descriptive and application data, write for Bulletin 46601. THE OILGEAR COMPANY, Dept. A, 1567 West Pierce Street, Milwaukee 4, Wisconsin.

If you write maker identify as IEN - 1016

Reciprocating action of the Commander Drill Chip Breaker breaks chips into small pieces that travel up drill flutes . . . permitting higher drilling speeds . . . doubles and triples production of shallow OR deep holes. Long chips which cause drill breakage, scored holes, slow jig and fixture loading, are eliminated—small, easy to handle chips flow up out of hole continuously, permitting coolant to reach cutting edge of drill. Assures longer drill life, more holes per sharpening, more holes per hour.

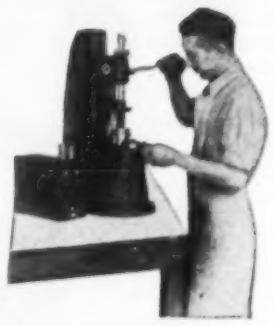
Write FOR CATALOG #851 which describes Commander's Production Tools

Commander MFG. CO.
4219 W. KINZIE STREET
CHICAGO 24, ILLINOIS

If you write maker identify as IEN - 1017

SPRING TESTING: The Solution of Many a Baffling Problem!

HERE'S WHY



When the performance of products with a spring mechanism varies, experience has proved that the most likely source of the trouble is the spring. It may be that certain springs are out-of-square, or have hidden flaws in the wire, or may be too weak or too strong of their intended purpose.

Check the springs FIRST! You'll find it will save you many tedious hours of hit-and-miss trouble shooting.

LINK Spring Testers

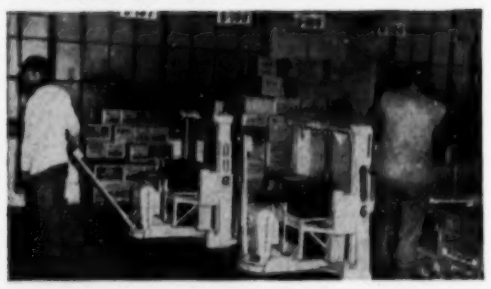
For speedy and accurate testing of springs—compression, tension or torsion—get a LINK Spring Tester. Hand operated instrument for spot-check, laboratory, and inspection. Also motor-driven instruments for production testing. Moderately priced. Send for complete information.

LINK ENGINEERING CO.
13848 Elmira Detroit 27, Mich.

Write for Catalog

If you write maker identify as IEN - 1018

B.F.Goodrich



How do you determine the right size tire?

Need tires to resist cuts and bruises?

TW ANALYSIS

man shows you how to slash industrial tire costs . . .

You can save as much as 50% on industrial tire costs by calling in a B. F. Goodrich Tire and Wheel Analysis man. He is trained to:

1. study your equipment, loads, speeds, hauling surfaces and any unusual materials handling problems you have,
2. make suggestions for better, more efficient maintenance that alone can save you 10 to 20%,
3. and recommend the right tires—type, size, tread compound and tread design—for your particular operations.

You can be sure the advice you get is unbiased, for B. F. Goodrich makes a *complete* line of industrial tires—solids, pneumatics and semi-pneumatics in a wide range of tread designs and compounds.

Hundreds of industrial tire users are cashing in on the TW Analysis Plan—are getting more economical, more efficient service from industrial tires and wheels. Take advantage of this plan by sending in the coupon or calling your B. F. Goodrich retailer. He sells and services a complete line of industrial tires. A special TW Analysis Plan is available for manufacturers of industrial hauling equipment.

The B. F. Goodrich Co.
Department TW-225, Akron, Ohio.
Please send me:
☐ *Additional information* on your new Tire and Wheel Analysis Plan
☐ A free copy of your "Industrial Tire Guidebook".
Name _____
Title _____
Company _____
City _____ State _____

If you write maker identify as IEN - 1020

GAGE . . Pneumatic instrument to check jet engine blades quickly

Source: PRATT & WHITNEY
49 Charter Oak Blvd., West Hartford 1, Conn.

Speed added to accuracy

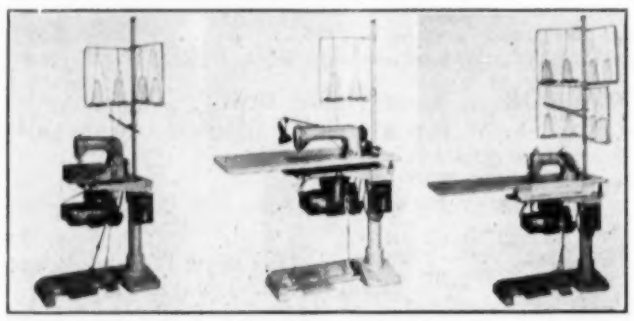
New tooling has been developed for the company's Air-O-Limit pneumatic gage to check pitch diameter of the fir tree root form and, separately, to check the pitch diameter of the internal root form of the engine blade carrier. The first unit, to the left in the illustration, employs a carbide ball point spindle opposite a roll type anvil to operate the single air nozzle. A carbide roll pressure shoe spans the gage point and provides for positive location of the gage on the blade root during the checking operation.

The carrier gage, to the right, employs a carbide roll type anvil and carbide gaging roll, the latter on a pivot arm to operate the single air nozzle. Both gages are set to minimum and maximum masters. They replace the previous relatively slow method of using hand micrometers and thread wires.

If you write maker identify as IEN - 1021

SEWING . . Pedestal assemblies for the company's industrial machines

Source: UNION SPECIAL MACHINE CO.
402 N. Franklin St., Chicago 10, Ill.



Each machine a flexible unit

Two new types of pedestal have been developed for the Union Special Lockstitch and Series 50,000 flat bed machines. One, intended for tubular operations, positions the machine so it overhangs the pedestal base. The second is designed for use when the operation calls for a conventional table board and, where desired, for a tray also. In both types the machine is isolated from the base for smooth quiet operation.

Sewing head height is adjustable vertically on the column. The foot treadle is adjustable also to suit the individual operator. Provision is made to install lights, thread stands, tape reels and similar equipment. Machines and table boards can be changed quickly without disturbing the thread stand, motor, switch box or electrical connections.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1022

Warm COLD FEET with • THERMO-MAT •

Here's INSTANT RELIEF from cold, aching feet, at work or at home, sitting or standing! THERMO-MAT emits PENETRATING RADIANT WARMTH extending from toes to knees! Licks cold floor problem everywhere—*drafty locations, unheated rooms, booths, concrete floors, etc.!* Unaffected by dampness.

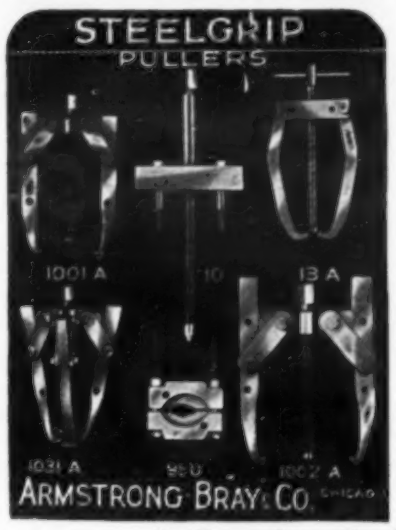
Plugs into 110 Volt socket—uses only 125 Watts. Size 14" x 22", full neoprene covered. **(No rubber)**

PRICE **$12.00** Shipped Postpaid

SAFE, ECONOMICAL *Order now by mail for all uncomfortable locations. Describe conditions of use, type of floor, outside or inside installation.*

THERMO-MAT CO.
814 SOUTH ROBERTSON BOULEVARD • LOS ANGELES 35, CALIFORNIA

If you write maker identify as IEN - 1023



The 6 most needed pullers

A Complete Package Unit . . .

These popular pullers come on a permanent steel tool rack. The sizes and type of STEELGRIP Gear, Wheel and Bearing Pullers most frequently needed in tool room, maintenance shop and garage are now packaged on this practical heavy gauge fitted steel board. With these drop forged quality tools, you can pull wheels, gears, pulley pinions and bearings off from shafts easily and quickly without battering or breakage.

Pullers are cadmium plated; board finished in deep blue "hammered finish" with gold trim.

Write for catalog of Standard and Special Wheel Pullers.

ARMSTRONG-BRAY & CO.
5380 Northwest Highway • Chicago 30, Illinois

If you write maker identify as IEN - 1024

Made of tough, durable Ethyl Cellulose plastic. This cable clip will hold wires or groups of wires neatly and securely in position . . . no possibility of shorts or grounds. Only one fastener is required (screw, nail, rivet or eyelet) with these loop type supports.

Write for samples details, prices

WECKESSER CO.
ALSO MFRS. OF ALL NYLON CABLE CLIPS
5257 N. Avondale Ave. • Chicago 30, Ill.

If you write maker identify as IEN - 1025

Another Shawmut First

...MACHINE-PRINTED FUSES

PERMANENT FOOLPROOF IDENTIFICATION

Pioneered by Chase-Shawmut, these modern, machine-printed cartridge fuses give real benefits to those handling them. Old-fashioned, gummed, paper labels are often obliterated or detached by moisture, humidity, dirt, chemical atmospheres, etc. Now, permanent, positive smooch-proof printing right on the fuse itself replaces these old-fashioned labels. Voltage ratings, coded by bright Underwriter-approved colors, and amperage ratings printed in large bold type, have high visibility and are easy to identify on switch-board or shelf, even in dark places. User, contractor and wholesaler alike will appreciate this advantage.

Shawmut's 60 Ampere, Cartridge-Type, One-Time fuses are the first to carry the new printed labels. The 30 Amp. will come next and be followed by 100 Amp. fuses. Eventually the entire Shawmut cartridge line, including *Amp-traps* will be machine-printed.

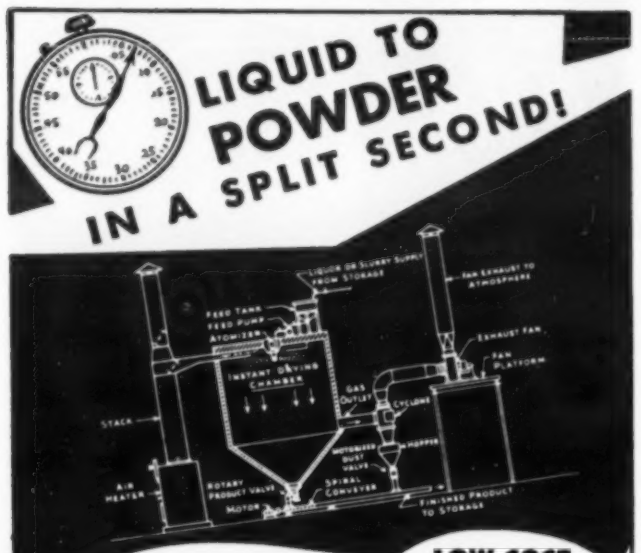
SHAWMUT LEADERSHIP

The machine-printed fuse is only a minor example of Shawmut leadership in modern circuit protection. Amp-trap, the amazing new current limiter, with Trion and Trionet, the triple protection, low-voltage fuses, are other examples that demonstrate the advanced engineering and design that users, contractors and wholesalers are beginning to look for in all Chase-Shawmut products. Investigate them now. Write today.

AMP-TRAPS — *"Awake At The Switch"*

THE CHASE-SHAWMUT CO.
386 MERRIMAC STREET • NEWBURYPORT, MASSACHUSETTS

If you write maker identify as **IEN - 1026**



FOR
CHEMICALS
FOOD PRODUCTS
SOAP POWDERS
CLAYS & CLAY SLIPS
PLASTICS
BY-PRODUCTS
WASTES

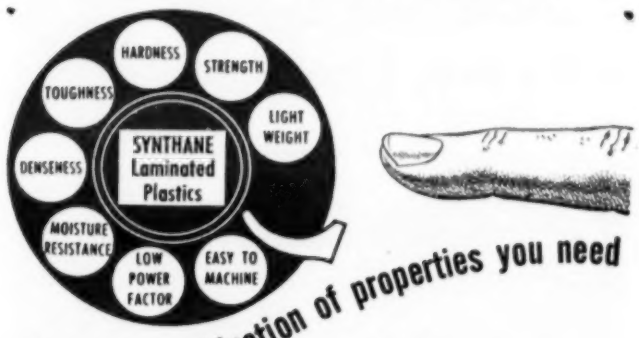
LOW COST PRODUCTION DRYING

Instant Drying System Units are operating commercially on the drying of these materials. A large manufacturer of wall tile says their Instant Drying equipment "has produced . . . greater quantity . . . better quality . . . an economy of labor and an ultimate over-all cost reduction for the finished product."

Write us about your drying problem. Arrange with us for test runs on your material at our Poughkeepsie plant.

INSTANT DRYING CORPORATION
104 East 41st Street • New York 17, N. Y.
Testing & Research Laboratories at Poughkeepsie, N. Y.
Engineering by CLARK, MacMULLEN & RILEY, INC., N.Y.

If you write maker identify as **IEN - 1027**



Dial the combination of properties you need

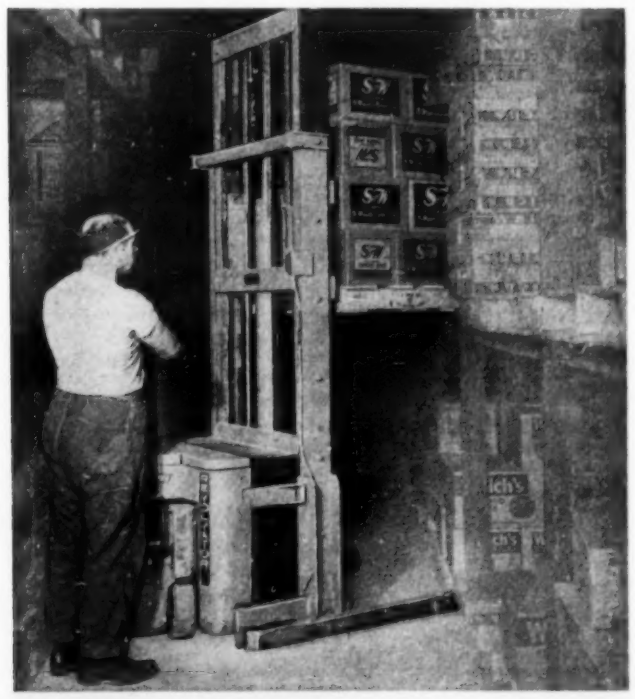
Synthane laminated plastics have a wide variety of valuable mechanical, chemical and electrical properties—and have them in combination. Synthane combines, in one easy-to-machine material, light-weight, strength, chemical and moisture resistance, hardness, toughness, denseness, high dielectric strength, low dielectric constant and low power factor. And many more. Why not find out more about this unusual material today? Just clip and mail the coupon for the complete Synthane Catalog.

SYNTHANE

Manufacturers of laminated plastics
SHEETS
RODS • TUBES
MOLDED-LAMINATED
MOLDED-MACERATED
FABRICATED PARTS

SYNTHANE CORPORATION
South River Road, Oaks, Pa.
Gentlemen:
Please send me the new Synthane Catalog at once.
*Name*_____
*Address*_____
*City*_____ *Zone*____ *State*_____

If you write maker identify as **IEN - 1028**



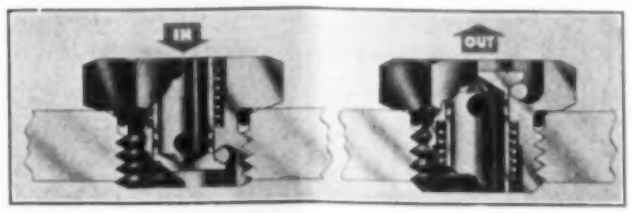
FINGERTIP CONTROL—Revolvator Go-Getter—telescopic straddle type lift truck—a bear for work in crowded areas, narrow aisles. Fully automatic—extraordinarily maneuverable 200° turning arc—2500 lb. capacity—very slight operator training necessary. Write for full details of this and many other models.

REVOLVATOR CO. 8759 TONNELE AVENUE NORTH BERGEN, N. J.

If you write maker identify as **IEN - 1029**

VALVE . . Pressure relief design permits shipping container to breathe

Source: JAMES-POND-CLARK
2179-83 Foothill Blvd., Pasadena 8, Calif.



Permanent zero leakage

New valve threads into a suitable fitting in hermetically sealed containers such as those employed to protect delicate electronic equipment sensitive to environment damage. The valve applies in pairs to exhaust excessive internal pressure or admit external pressure on change in atmospheric pressure surrounding the container.

The design is based upon the company's Circle Seal O-ring which compresses between the seat and the valve head in closed position. Opening pressure can be pre-set to meet user requirements. Other types are available for external adjustment in the field should this be required.

If you write maker identify as **IEN - 1030**

LUBRICATING . . Molybdenum base liquid acts to plate bearing surfaces

Source: LOCKREY CO.
P. O. Box 1118-A, Southampton, N. Y.

Detail data in Bulletin 21-H

Molynamel trade names a new liquid material in the company's line of molybdenum base lubricants, previously described IEN-2327-50. Application is by brushing or spraying. The liquid carrier evaporates to leave a lustrous hard and clean lubricating film not more than 0.0005 in. in thickness. The liquid penetrates into porous surfaces where it fills the pores and provides a feeding supply of the lubricant.

If you write maker identify as **IEN - 1031**

PUMP . . Motor driven centrifugal in 5 gal. container to handle coolants

Source: SAMUEL S. GELBER CO.
160-64 N. Clinton St., Chicago 6, Ill.

5 gpm. at 2 ft. head

Model 5GC is a new assembly of the company's motor driven centrifugal pump, a 5-gal. handle equipped container for portable application, a 6-ft. oil resistant hose with flow control valve and a strainer return opening with a removable screen. The 1/30-hp. enclosed 110-volt 60-cycle ac. motor plugs into a power source by a switch equipped extension cord that is part of the standard equipment. Pump construction is in bronze.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as **IEN - 1032**

Are you paying too much for FILTRATION?

Our studies show that many companies are. And over-filtration is usually the cause.

For example, a micronic filter is highly desirable for certain purposes—but maybe you don't need such fine particle removal. Cuno's AUTO-KLEAN, the modern disc-type strainer, may do the same job and save you money in maintenance costs. (We make three types of filters and strainers—disc, micronic, and wire-wound—so we can give an impartial recommendation covering your needs.)

Find out whether you're getting your money's worth out of your filter. Let Cuno's free filter engineering service work for you.

Write now for our filtration analysis form, have one of your engineers fill it out, and mail it to us. We'll let you know exactly what you need—with no obligation on your part. Cuno Engineering Corp., Dept. 697A South Vine Street, Meriden, Connecticut.

CUNO *ENGINEERED FILTRATION*

If you write maker identify as **IEN - 1033**

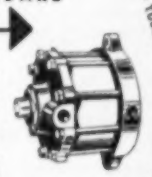
LOGAN AIR AND HYDRAULIC POWER

SPEEDS • COORDINATES • REFINES PRODUCTION
IN OVER 10,000 INDUSTRIAL PLANTS

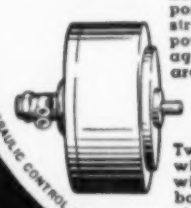
Logan

ROTATING AND NONROTATING **AIR CYLINDERS**

NONROTATING—7 STANDARD MOUNTING TYPES



Standard sizes from 1½" to 16" bore; maximum stroke, 18". Special models to meet your requirements. Logan features larger ports, sturdier construction, maximum power without leakage, permanent seal around piston rod.



ROTATING

Two standard styles—Type R with cast iron body; Type K with lightweight aluminum body. Bore 1½" to 20" stroke 1" to 2". Longer strokes special.

AIR CYLINDERS • AIR-DRAULIC CYLINDERS • AIR and HYDRAULIC PRESSES • COLLET GRIP TUBE FITTINGS • SURE-FLOW COOLANT PUMPS • HYDRAULIC POWER UNITS • HYDRAULIC CYLINDERS • HYDRAULIC CONTROL VALVES • AIR CHUCKS • AIR CONTROL VALVES

SAVES TIME Logan AIR AND HYDRAULIC EQUIPMENT REPORT-MOTION

LOGAN MANUFACTURES 6,975 STANDARD CATALOGED ITEMS • CATALOG ON REQUEST
Consult Logan for your Special Heavy-Duty, Mill-Type Cylinder requirements.

LOGANSPORT MACHINE CO., INC.
813 Center Avenue Logansport, Indiana

If you write maker identify as **IEN - 1034**

Graybar "AMAZON BRAND"

RUBBER AND FRICTION TAPES

These top-quality tapes meet the most exacting job requirements

AMAZON FRICTION TAPE — Constant production line inspections guarantee the high quality and extreme uniformity of Graybar's Amazon friction tape. The special, long-fibred rubber compound virtually eliminates pinholes and affords superior adhesion. Meeting A.S.T.M. and Government specifications, Amazon tape is supplied in standard #8 rolls, 82½" in length.

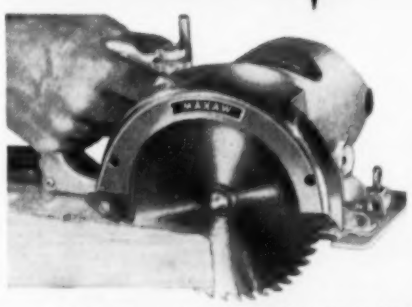
AMAZON RUBBER TAPE — Designed for the severest kind of service, Graybar's Amazon rubber tape meets both A.S.T.M. and Navy Specifications. Made of purest plantation rubber, it is extremely elastic and amalgamates readily into a solid water-tight joint. It withstands a dielectric test of 350 volts per mil of thickness.

For complete information on Graybar Amazon tapes check with your local Graybar Representative. Graybar Electric Co., Inc. *Executive Offices: Graybar Building, 420 Lexington Avenue, New York 17, N. Y.* 870-131

Call Graybar *first* for . . . *Everything Electrical* GraybaR ELECTRIC COMPANY

If you write maker identify as **IEN - 1035**

MAXAW 700 magic pivot does it!



$ for $ and lb. for lb.
CUTS DEEPER AT 45°

All Ball and Roller Bearing MAXAW $69.50

Now you get a heavy-duty industrial saw that weighs only 10 lbs. and cuts 1⅞" at 45° . . . something no other industrial saw with a blade under 7¼" and costing under $115.00 will do. *magic • pivot* does it! Yes, the simple but long-overlooked *magic • pivot* engineering achievement puts the pivot point closer to the saw shaft, brings you performance found only in *magic • pivot* MAXAWS. Hard-biting "sub-radius" blades stand 3 to 4 more sharpenings . . . last twice as long. The MAXAW does more work . . . faster work . . . and costs less.

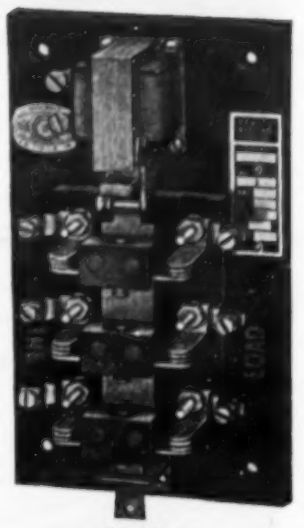
Free Pamphlet— Find out what *magic • pivot* can do for you. Send for Pamphlet I-13.

Cummins-Chicago Corp.
DIVISIONS:
Cummins INDUSTRIALS • Cummins Portable Tools
8740 N. Ravenswood Ave. • Chicago 40, Illinois
IN CANADA: 334 Lauder Ave., Toronto

If you write maker identify as IEN - 1036

NEW ZENITH MAGNETIC SOLENOID CONTACTORS

★ SOLENOID OPERATED
★ FINE SILVER CONTACTS
★ SIMPLIFIED WIRING



TYPE SC 33

This ZENITH contactor is built to withstand the severe service demanded by loads based on Type-C lamps.

It is designed on the straight-line principle, with the solenoid being connected directly to the contact bar.

The advantage of this method of construction is its easy access to any part for quick inspection or service, without disturbing other parts.

Models: Size 1 — 25 amps. Size 2 — 50 amps.

Either size can be supplied in any number of poles.

SEND FOR FREE CATALOG

This big, illustrated catalog contains all the newest items in automatic control equipment made by Zenith! Write now for your Copy!

ZENITH ELECTRIC CO.
146 W. WALTON ST., CHICAGO 10, ILLINOIS

If you write maker identify as IEN - 1037

No work for them since Transall took over

Pre-Lubricated

Belt Conveyor Idlers

No Labrication Labor
No Lubricant Cost

TRANSALL INC.

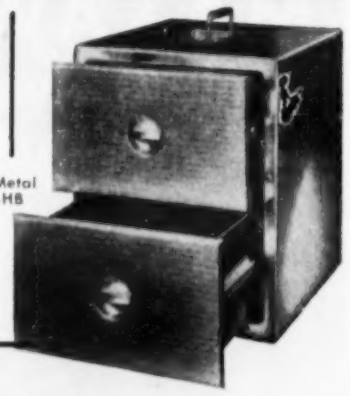
Manufacturers of a complete line of Belt Conveyor Equipment

117 North 11th St. Birmingham 4, Ala.

If you write maker identify as IEN - 1038

TOUGH HIDE for HOT CHOW

Rigid-Tex Metal Pattern 2-HB



RIGID-*tex* METALS

On MAPCO Hot-Food Ovens

Design-strengthened Rigid-Tex Metal is selected for the outer casing of Hot-Food Ovens by Mansfield Aircraft Products Co., Mansfield, Ohio. Scrapes, scratches, dents and other surface damage so common during transportation of containers — whether by plane and train or in factory cafeterias — are concealed and minimized with the added rigidity, impact resistance and more decorative appearance of Rigid-Tex Metals.

If it's durability plus beauty your product needs, drop us a note for complete details . . . on your company letterhead, please.

RIGIDIZED METALS CORPORATION
6641 OHIO STREET BUFFALO 3, N. Y.

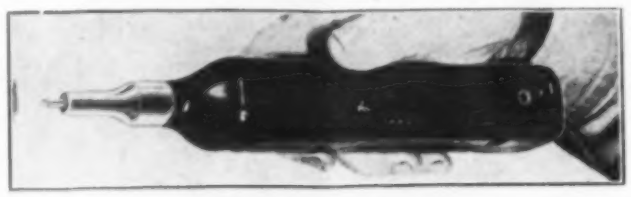
50 Warehouses and Sales Representatives in All Principal Cities Throughout the U. S. and Canada.

U. S. & Foreign Patents

If you write maker identify as IEN - 1039

SOLDERING . . Electric iron fits in worker's hand, heats quickly

Source: MITCHELL INDUSTRIES INC.
P. O. Box 17-A, Mineral Wells, Texas



Head lamp illuminates tip

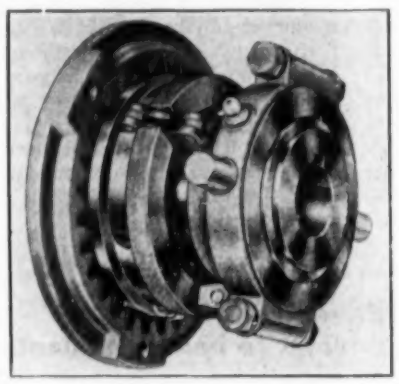
Special transformer enclosed in the plastic housing of this new Vasco soldering iron takes power from a 110-volt 60-cycle ac. line. The transformer produces a high current low voltage output to a Nichrome heating element. This element transmits heat directly to the rigid chisel type replaceable tip at the end of the iron.

A control lever lies along the length of the handle. When it is moved in to start the iron, the temperature is brought up to a certain point. When it is pressed in all of the way it provides essentially instant high heat at the tip for a soldering operation. Housing dimensions are 10½ by 1¾ inches. Three tips are provided with each iron.

If you write maker identify as IEN - 1040

CLUTCH . . Single disc design for machine drive to ½ hp. at 100 rpm.

Source: CARLYLE JOHNSON MACHINE CO.
P. O. Box 293, Manchester, Conn.



Ask for Bulletin 250

Model 350, rating ¼ hp. at 100 rpm. and suited for drives to 3 hp. maximum, is one of two new single disc clutches in the company's Maxitorq line. Model 450 with rating to ¼ hp. at 100 rpm., for drives to 6 hp., is the second of the two new units. Both employ the patented floating disc that rides free in neutral with visible space so there is no drag or abrasion.

Adjustment is made by tightening a knurled ring on the hub. The disc design and its finish assure good wear and smooth engagement. Both models are for operation dry. Several drive combinations can be specified including V-belt, cut-off coupling, bolted plate, and the gear tooth unit shown.

Identify as IEN - 1041

Deals that glow in the dark are now available from Luminous Decals in Ohio. Toy makers use them so Papa will see the things Junior left on the floor when he comes home late. Equipment makers employ them for instructions that must be visible at all times. All they need is exposure for a few minutes a day to natural or artificial light.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1042

The Case Of The Haunted Engineer

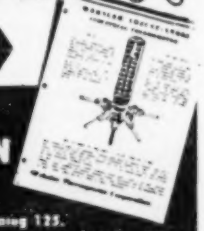
This engineer is haunted by thermometer installation problems.

Smart purchasing agent suggests: "How about: **WEKSLER ADJUST-ANGLE INDUSTRIAL THERMOMETERS?"**

"Hello, **WEKSLER?"** Engineer goes into action! "Send over plenty of **ADJUST-ANGLE INDUSTRIAL THERMOMETERS!"**

The bottleneck spell is broken. **WEKSLER ADJUST-ANGLE INDUSTRIAL THERMOMETERS** solve all plant installation problems without complicated calculations! They adjust to ANY angle through a 180° arc!

Today—find out how WEKSLER can make things smoother in YOUR plant! Ask your jobber for Important Free Bulletin AA50 or write to:



"Industrial America's Right Arm"
WEKSLER THERMOMETER CORPORATION
Martinique Bldg.
49 W. 32nd St., New York 1, N. Y.

For Industrial Thermometers Send for Catalog 125.
For Glass Engraved on Stem Thermometers and Hydrometers, Send for Catalog 225.
For Dial Indicating and Recording Pressure Gauges, Send for Catalog 325.
For Dial Indicating and Recording Thermometers, Send for Catalog 325.

If you write maker identify as IEN - 1043

NOW you can have METERED IDENTIFICATION for formula, inventory and cost controls

STAINLESS STEEL METER
Inside and Out

STOPS CORROSION PROBLEMS HANDLING FOODS, PHARMACEUTICALS, CHEMICALS, OTHER LIQUIDS

This new Rockwell Type 2BC Rotocycle meter is of all-stainless steel construction; corrosion-resistant, easy to clean. It provides accurate records of quantities of liquids handled which are so important in quality control, scheduling, cost accounting and tax analyses. Quantity Control Registers and Remote Registration Systems are available. Described in Bulletin OG-403. *Write Rockwell Mfg. Co., Dept. B-7,* Pittsburgh 8, Pa.

You Can RELY ON ROCKWELL INDUSTRIAL METERS

If you write maker identify as IEN - 1044

for hand hole cover plate studs, etc...LEADING

BOILER MFRS. & USERS

now standardize on

C-5 "HI-TEMP" THREAD COMPOUND

√ speeds up dis-assembly time!
√ prevents stud breakage!
√ eliminates pitting of stainless steel!

NO MORE FROZEN OR GALLED STUDS EVEN AT 1800° F

Leading boiler mfrs. and users have proved through extensive tests that coating all hand hole boiler cover plate studs with Fel-Pro C-5 "Hi-Temp" will effect a substantial savings in time, labor and costly stud breakage.

Fel-Pro's exclusive Colloidal-Copper formula allows for easy separation and reduces stud breakage of threaded assemblies after long exposure to extreme temperatures. It eliminates galvanic pitting of stainless and alloy steel even where dissimilar metals are joined.

Conduct your own tests with C-5 "Hi-Temp" at our expense. See how it can lick your toughest thread breakage problems . . . Write for FREE Sample and complete data sheet TODAY!

FELT PRODUCTS MFG. CO.
1523 Carroll Ave., Chicago 7, Illinois

If you write maker identify as IEN - 1045

BUSCHMAN CONVEYOR CUTS ASSEMBLY COSTS 50%

for automotive transmission builder

More than a year's use shows that a Buschman Roller Conveyor has cut approximately 50% in assembly costs for a noted transmission manufacturer. "Very satisfied with the installation," the user reports that the conveyor is flexible, permits time-saving straight line assembly never possible before.

There's a Buschman Conveyor to move practically any part or product faster, easier and at lower cost. Find out why users in every industry say Buschman Conveyors are "Better Built . . . A Better Buy." Write for literature: Catalog 60—Roller Conveyors or Catalog 400—Complete Conveyor Line.

PRODUCE MORE . . . FOR LESS
Buschman Conveyors

The E. W. BUSCHMAN Co.
4479 Clifton Avenue
Cincinnati 32, Ohio

Representatives in Principal Cities
Canadian Licensee:
J. A. McKECHNIE, LTD.
Toronto 13, Canada

If you write maker identify as IEN - 1046

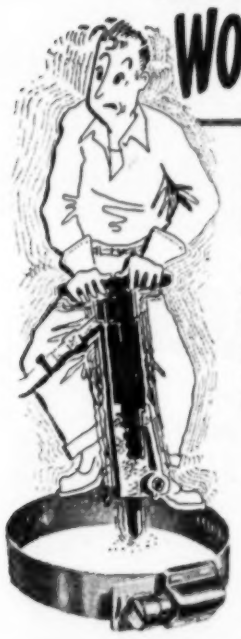
MAKE *FAST* PERMANENT REPAIRS ON LEAKING FAUCETS, VALVES

REPLACE Worn Seats with Endurable Bronze in a few minutes, STOP WASTE...SAVE MONEY

Economy VALVE SEAT CO.
1438 N. Keating Ave. Chicago 51, Illinois

If you write maker identify as IEN - 1047

AERO-SEAL WORM-DRIVE HOSE CLAMPS WON'T SHAKE LOOSE!



Wherever you have to clamp a hose connection tight . . . or wherever you want to lock two objects of any shape together in an unshakeable bond . . . your best bet is AERO-SEAL.

Threads of steel worm engage deep into slots in stainless steel band — hold tight under extreme vibration in automotive, aircraft and industrial applications. CAN'T SHAKE LOOSE.

One-Hand Installation
Install an Aero-Seal any place you can reach with thumb and one finger. Self-feeding when band engages worm threads. Thumb-grip and screwdriver types.

Re-use Again and Again
When hose is worn you RE-USE the same Aero-Seal again and again. RE-USE Aero-Seals on temporary clamping jobs—they conform to any shape without damaging band.

Use of Stainless Steel Subject to Government Regulations

"Aero-Seal"® WORM DRIVE HOSE CLAMPS
ANOTHER BREEZE PRODUCT
BREEZE CORPORATIONS, INC.
41 South Sixth St. Newark, N. J.

If you write maker identify as IEN - 1048

Here's HAND TRUCK News!

GUARANTEE
If this AMERICAN HAND TRUCK fails in service for any reason (normal wear on rubber tread wheels excluded) —within five years from date of delivery—return it freight prepaid for repair or replacement to
THE AMERICAN PULLEY COMPANY
4200 Wissahickon Ave., Philadelphia 29, Pa.
SAVE THIS CARD—IT'S YOUR GUARANTEE

AMERICAN HAND TRUCK HEADQUARTERS

ONLY AMERICAN GIVES YOU THIS GUARANTEE

Clip and Mail Coupon For Bulletin

Materials Handling by

AMERICAN PULLEY COMPANY

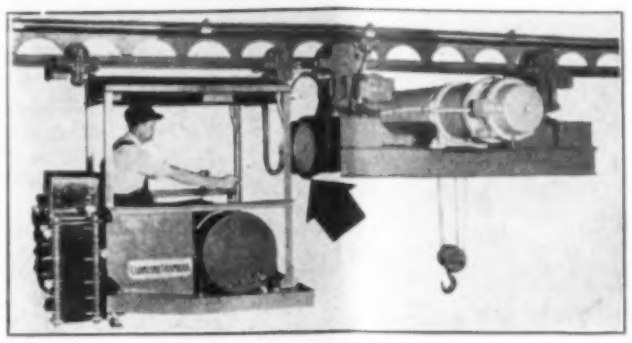
Complete line of Pressed-Steel Hand Trucks, Barrel Cradles, and Steelite Industrial Wheels.

The American Pulley Company
4240 Wissahickon Ave., Philadelphia 29, Pa.
Gentlemen:
Please send me your latest bulletin on American Hand Trucks.
Name_____
Firm Name_____
Address_____
City_____ Zone____ State____

If you write maker identify as IEN - 1049

CONVEYING . . Tramrail carrier equipped with hydraulic load scale

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Wickliffe, Ohio



To lift, weigh and carry loads

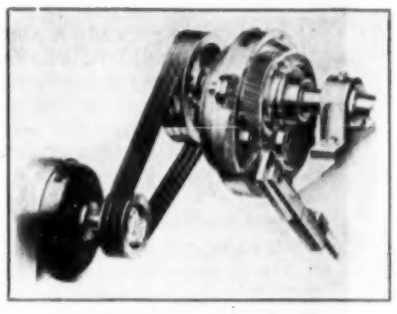
New assembly of the company's motor driven hoist equipped Tramrail Carrier includes a hydraulic scale operating from a cylinder that suspends the upper hoist sheave. When a weight is secured to the lower hook block and lifted from the floor its weight is transmitted by the cylinder to a weighing scale in front of the operator where he can read its amount on a dial.

The carrier operates at a travel speed of 300 fpm. Hoisting speed is 38 fpm. Overall lift is through 36 feet. Travel and hoist motors are provided with variable speed controllers and the hoist controller is designed for dynamic braking. Load capacity of the assembly is 3 ton.

If you write maker identify as IEN - 1050

DRIVE . . Speed reducer designed to mount on a driven shaft

Source: AMERICAN PULLEY CO.
4244 Wissahickon Ave., Philadelphia 29, Pa.



Note gear arrangement

New assembly in the company's Shaft-King speed reducer line, previously described IEN-6555-51, provides a 20 to 1 speed reduction. It is designed to take interchangeable taper bushings in its output hub to apply on any shaft size to 3 1/16 inch. It requires a shaft length equal to twice the diameter plus clearance for mounting the unit.

Two trains of single helical gears, cut from alloy steel forgings, are flame hardened and mounted inside the housing. The gear shafts ride on either ball or taper roller bearings and are splash lubricated by the high speed gear and the counter-shaft pinion which run in the oil reservoir in the lower third of the housing. Both the input and output are above the oil level so they need not operate against a head of oil. Both are sealed against oil leakage.

The company can supply a torque arm overload release to protect the drive against shock loading and overload. Additional reduction can be obtained by choice of the belt sheaves between the reducer and the driving motor

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1051

step up to the

safety level

Dayton Safety Ladders pay their own way. The "safety level" working platform makes high jobs "ground-safe" — helps prevent costly ladder accidents. Check the "big 6" features that make Dayton your best buy.

1. Rail guarded "safety level" platform.
2. Locks in place automatically.
3. Rubber safety shoes.
4. Light weight—great strength.
5. Economically priced.
6. Complete size range 3' to 16' in height.

Write Dept. J for Bulletin

Dayton safety ladders

Dayton safety ladder co.
2339 Gilbert Ave., Cincinnati, O
In Canada—
SAFETY SUPPLY CO., TORONTO

If you write maker identify as IEN - 1052

A PAID NEWS ADVERTISEMENT BY QUINCY COMPRESSOR CO.

Air Compressors: HOW TO SELECT THE CORRECT SIZE AND TYPE TO MEET YOUR SPECIFIC REQUIREMENTS

Available without charge from:

Quincy Compressor Co.
DEPT. H-28, QUINCY, ILLINOIS

This up-to-date 12 page book provides detail charts, formulas and factual data essential to accurate selection of Air Compressors for specific jobs. When you know your actual compressed air requirements and estimated future needs the job is an easy one. This book also contains valuable installation and maintenance instructions. It has been made available by the Quincy Compressor Co., manufacturers of a complete line of air and water cooled compressors ranging in size from 1 to 90 c.f.m. Write Dept. H-153, Quincy, Illinois.

If you write maker identify as IEN - 1053

PRATER ROTARY AIRLOCK FEEDER

FEEDS powdered and granular products into conveying line—quickly and accurately!

STOPS air leakage at the discharge of dust collectors or other pneumatic equipment!

PRE-DETERMINES rate of feeding material into mixers, blenders, hoppers, etc.

RECOMMENDED in the processing of: Ball Clay, China Clay, Diatomaceous Earth, Kaolin, Grains and Feeds, Graphite, Limestone, Whey Powder, Calcium Carbonate, Sulphur, Fullers Earth, Ochre, Volcanic Ash, Bronze Powder, Bauxite, Carbon Black, Salt, Barium Carbonate, Marl, Sugar, Cocoa, Gypsum, Silica, Manganese Sulphate, Phenolic Molding Compound.

Send for new illustrated bulletin

PRATER PRATER PULVERIZER COMPANY
1536 So. 55th Court • Chicago 50, Ill.

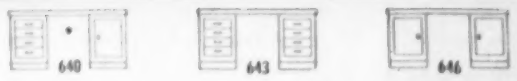
If you write maker identify as IEN - 1054

"640" series

HALLOWELL UNIT WORK BENCHES

Multiple unit design enables you to *custom build* these HALLOWELL benches to fit your requirements. Standardized construction permits individual or continuous installations . . . provides interchangeability with other HALLOWELL benches of similar dimensions. Stocked and sold by leading industrial distributors. Write for literature. SPS, Jenkintown 14, Pa.

3 basic models for your convenience



Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL SHOP EQUIPMENT DIVISION **SPS** JENKINTOWN PENNSYLVANIA

If you write maker identify as **IEN - 1055**

Insure Product Performance...

use **Quadriga®** **STAMPINGS and WASHERS**

Parts Assembly Work

Build long-lasting, quiet and dependable performance into your products. Specify Quadriga Stampings, Washers and Assembled Parts. Custom-fabricated to your exact specifications . . . Quadriga quality is your insurance against vibration, noise and resultant wear.

Stampings of all types. Tension, spring, formed, cupped or finishing washers . . . all materials. Wire terminal washers. Parts assembly work. Press capacity to 150 tons . . . depth of draw to 4 in. We build dies.

Send B/P, sample or data for estimate. Ask for new illustrated catalog.

THE QUADRIGA MANUFACTURING CO.

215A West Grand Avenue • Chicago, Illinois

If you write maker identify as **IEN - 1056**

NEW...ENGINEERED FOR PAINTING!

GPX GREEN — PLASTIC-FACED PLYWOOD

Completely new and especially designed to make painting faster and easier, GPX GREEN offers you the finest painting surface obtainable. Here are the features which will save time and money for you:

1. Can't crack or check.
2. Reduces grain raise.
3. Can be covered with one coat.
4. Makes paint last 2 to 3 times longer.
5. Smoother, needs no sanding.
6. Low bending radius.
7. All-purpose for interior or exterior use.

GPX GREEN will cut your maintenance costs, speed your manufacturing operations. This plastic-faced plywood is the ideal material for Exterior and Interior Sidewalls, Cabinets and Built-Ins, Children's Furniture and Toys, House Trailers, Displays and Fixtures, Outdoor Signs and wherever a smooth paint surface is desired. Write today for further information.

GEORGIA—PACIFIC
PLYWOOD COMPANY
614-B1 North Capitol Way, Olympia, Wash.

OFFICES OR WAREHOUSES IN: Augusta, Baltimore, Birmingham, Boston, Chicago, Cleveland, Columbia, Detroit, Fort Worth, Lancaster, Los Angeles, Louisville, Memphis, Nashville, Newark, New Castle, New Hyde Park, New Orleans, Olympia, Orlando, Philadelphia, Pittsburgh, Providence, Raleigh, Richmond, Savannah, Vineland.

For complete data, fill in and mail this coupon *today*

Georgia-Pacific Plywood Company
Plastic Plywood Division
Marsh Street
Port Newark 5, N. J.

Please send me Free Technical Data Manual on GPX GREEN plastic-faced plywood.

NAME.....
FIRM NAME.....
.....
FIRM ADDRESS.....
CITY.....STATE.....
POSITION.....

If you write maker identify as **IEN - 1058**

INSULATING . . Putty-like compound with disposable cloth tape backing

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

Will not dry out

Scotchfil is a new electrical insulating compound measuring 1½ in. in width and ⅛ in. in thickness. It is supplied with a disposable cloth tape backing in rolls containing 5 ft. of compound length. As it is applied, the tape is stripped off and the insulating material is molded into place with the fingers. It provides a smooth non-sticky surface that does not smear or come off on hands.

It fuses into a void free mass providing a dielectric strength of 350 volts per mil and insulation resistance of 100,000 megohms. An application is completed by wrapping the compound with the company's No. 22 or No. 33 Scotch plastic electrical tape. The backing and adhesive of these tapes from an inseparable bond with the material and add to the mechanical strength of a cable splice.

If you write maker identify as **IEN - 1059**

MAGNIFYING . . Stereo-microscope to inspect, count, check, dissect

Source: EDMUND SCIENTIFIC CORP.
167 E. Gloucester Pike, Barrington, N. J.

List is $75

An object is set up in a wide three-dimensional field by this new Stereo-Microscope with its fixed three-power objective. Three pairs of matched eye pieces provide 15, 30 and 45X magnification. Focusing is by operating a rack and pinion. Spread between the two eye pieces also can be adjusted.

The instrument is removable from its base to mount on equipment, on a bench or on the user's stand. Working distance of 2¾ in. is adjustable for additional height. Identification is Stock No. 70011.

Identify as **IEN - 1060**

Mercury cannot be lost from a manometer when it is fitted with the new steel miniature bottle Mercureceiver made by Chemiquip Company. The unit holds about 120 cc. and includes a stainless steel membrane that prevents passage of the mercury until pressure of 17 lb. has been reached. Application is at the top of a manometer. Mercury that it traps can be blown back to refill the manometer.

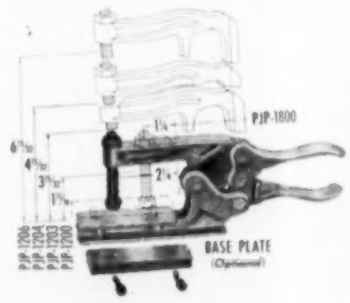
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

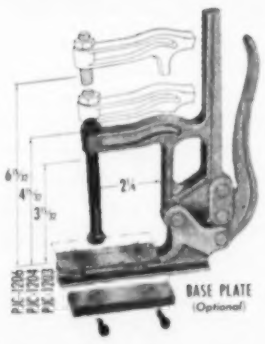
If you write maker identify as **IEN - 1061**

Introducing

8 NEW KNU-VISE MODELS

—to increase your production clamping efficiency still further by extending your work-holding range. Also bringing to your tool room a new type of equipment, long needed.





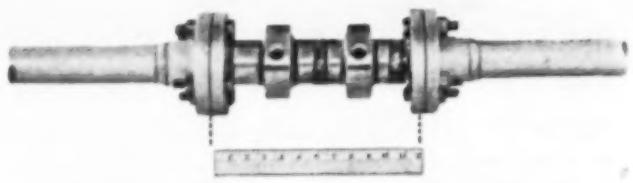
Base plate furnished 2 ways: (1) Loose, soft, so you can adapt it to your needs; (2) Installed, hard; thickness, including parallel jaw, 1".

Send for new catalog showing full line of KNU-VISE Clamps

Sales Offices in principal cities. Teletype DE-49

KNU-VISE PRODUCTS **LAPEER MFG. CO.**
3060 DAVISON ROAD • LAPEER, MICHIGAN
WESTERN DIVISION: 422 MAGNOLIA STREET • GLENDALE, CALIFORNIA

If you write maker identify as **IEN - 1062**



MINIATURE VENTURI TUBE SOLVES UNUSUAL PROBLEM

An important chemical producer looked everywhere . . . couldn't find a ready-made device to measure accurately a corrosive liquid's low flow of 159 lb./hr. So he asked the advice of Simplex.

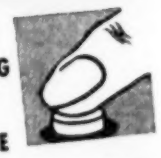
Simplex tailor-made a welded, corrosion-resisting stainless steel Venturi tube. This Venturi tube probably is the smallest in industrial process use. Main diameter is only 0.375"; throat diameter only .105". Machining to .0005" provides specified accuracy.

Consult Simplex on your special measuring problems, large or small. Write to Simplex Valve & Meter Company, Dept. 1, 6717 Upland Street, Philadelphia 42, Pa.

SIMPLEX®
VALVE AND METER COMPANY

If you write maker identify as **IEN - 1063**

PUSH BUTTON INSULATION RESISTANCE TESTING with VIBROTEST



- RANGES TO 50,000 MEGOHMS
- NO CRANKING • NO LEVELING
- ALL-ELECTRIC • RUGGED
- FULLY PORTABLE • ACCURATE

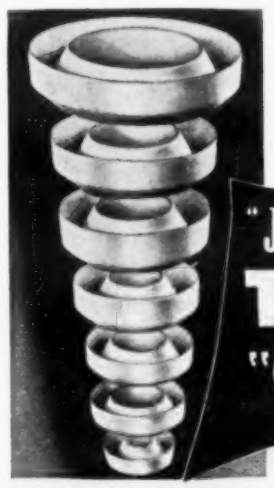
VIBROTEST is built throughout to make insulation resistance testing FAST, EASY and ACCURATE for you. No laborious cranking...No mechanical parts to get out of order...Only two binding posts for ALL tests. Several Models have A.C. and D.C. volt ranges, as well as low resistance ohmmeter.

This is an instrument that makes insulation resistance testing a "push-button" affair! Ask for more information.

WRITE FOR BULLETIN 2-A

ASSOCIATED RESEARCH, Incorporated
"Precision Instruments Since 1936"
3762 WEST BELMONT AVENUE • CHICAGO 18, ILLINOIS

If you write maker identify as **IEN - 1064**



Most Effective Seal Against ANY Corrosive Liquid or Gas!

"JOHN CRANE" TEFLON* "C-V" rings

"John Crane" offers a full line of standard size Teflon "C-V" Rings or can mold special sizes to fit your stuffing box requirements.

Send for catalog on "C-V" Rings and other Teflon products

This latest development in packing is chemically inert and withstands any corrosive liquid or gas as well as temperatures from—94°F. to 482°F. "John Crane" Teflon "C-V" Rings also have unusually low friction resistance—will not shrink, swell, harden, dissolve, corrode or deteriorate. Cross-section design allows effective sealing at low gland pressure. Ideal for use on all valve and reciprocating pumps as well as many centrifugal and rotary pump applications.

*DuPont Trade-mark for tetrafiouroethylene resin.

JOHN CRANE

CRANE PACKING COMPANY
1815 CUYLER AVENUE • CHICAGO 13, ILLINOIS

If you write maker identify as IEN - 1065

SPEED LOAD HANDLING

for Truck, Shop or Machine

UNIT *utility* HOIST

Hydraulically operated Unit Utility Hoists can speed and ease handling of 1000 to 2000 lb. loads around your trucks, shop or machines, and the hoist itself can be switched from the truck, floor or machine mount in seconds. Three lifting points and boom extension give a wide working range. Hoist swings 360° on truck and locks securely in traveling position. Many uses in every plant.

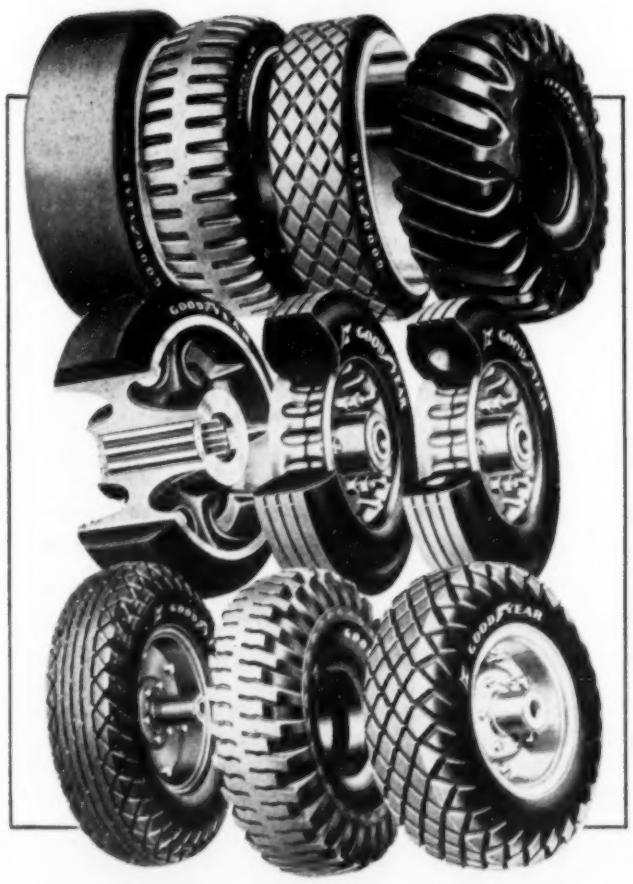
Write today for latest information

UNIT MFG CO. 1221 Harmon Place, Minneapolis 3, Minnesota

If you write maker identify as IEN - 1066

CUT COSTS

with the right industrial tire for each job!



GOODYEAR makes a *complete* Industrial Tire line. Goodyear can promptly supply you with exactly what you need for each specific job—without resorting to expensive makeshifts.

You'll save time and money—and headaches, too—consulting with, and specifying Goodyear.

FREE TECHNICAL ENGINEERING ADVICE AND SERVICE!

To help solve your particular Industrial Tire problems, Goodyear maintains a staff of fully qualified technical experts. For their free recommendations, write: Industrial Tire Sales, Goodyear, Akron 16, Ohio.

GOODYEAR

INDUSTRIAL TIRES

We think you'll like "THE GREATEST STORY EVER TOLD" —every Sunday—ABC Radio Network

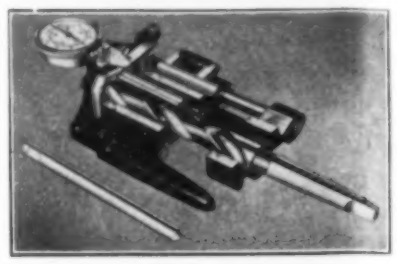
THE GOODYEAR TELEVISION PLAYHOUSE—every other Sunday—NBC TV Network

---

If you write maker identify as IEN - 1068

GAGE . . Dial indicator assembly to check the accuracy of a drill point

Source: ENGIS EQUIPMENT CO.
429-33 S. Dearborn St., Chicago 5, Ill.



Matrix gage

Two V-ways are assembled side by side in the body of this new gage. A dial indicator is mounted at one end. A drill is positioned in the V-ways on one side to provide a reading to show if a point is accurately on center. It is positioned in the other V-ways to read lip angle. Readings are in 0.001-in. divisions for centrality and in 1-deg. divisions for angle. Initial set-up is made to standard points supplied for various drill point angles. Two sizes take drills from ¼ to ¾ in. and from ¾ to 2½ inches.

If you write maker identify as IEN - 1069

RECTIFYING . . Germanium unit for computers, magnetic amplifiers

Source: GENERAL ELECTRIC CO.
1949 Electronics Park, Dept. N-13, Syracuse 1, N. Y.

Designed for built-in use

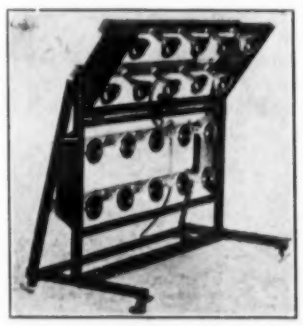
Four models are included in a new series of germanium rectifiers for use in computers, magnetic amplifiers, telephone switchboards, television receivers. The new unit measures ¼ in. in body diameter by $\frac{5}{32}$ in. in overall length. It is equipped with 1¼-in. leads on its opposite faces.

Glass to metal seals are used for protection against deteriorating elements. Peak inverse voltages range from 100 to 400 volts. Output current into a resistive load is from 75 to 500 milliamp. dc. Full load drop is about 0.5 volt in three of the units and 0.7 volt in the fourth. Ratings are at ambient temperature to 55 deg. C. in standard design.

If you write maker identify as IEN - 1070

DRYING . . Portable infra-red unit mounts adjustable multiple lamp panels

Source: TRIPPE MFG. CO.
607-11 W. Lake St., Chicago 6, Ill.



For utility use

Two panels, each with ten lamps, mount in hinged assembly on a caster equipped structural base to make up this new Type IR-20 infra-red unit. The panels can be raised from floor level to a maximum elevation of 76 inches. The upper panel can be tilted to any desired angle. Input is on 220-volt single phase ac. Maximum demand is about 3,900 watts.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

If you write maker identify as IEN - 1071

AIR trap selection and installation for automatic drainage of water from compressed air intercoolers, aftercoolers, receivers, separators and drip points are fully described. Helpful sections include typical installation diagrams, illustrations of the various models of Armstrong Air Traps, their applications and operation, and their materials (cast or forged steel bodies and caps, chrome steel valves and seats, stainless steel interior parts). Physical data and list prices complete the story.

There's enough information here for anyone to make the most effective air trap selection for *any* moisture drainage job, any pressure or capacity range. FOR YOUR COPY, WRITE:

ARMSTRONG MACHINE WORKS
888 Maple Street Three Rivers, Michigan

If you write maker identify as IEN - 1072

A PAID NEWS ADVERTISEMENT BY UNITED LABORATORIES, INC.

NEW SURFACE FOR OLD FLOORS

"Pre-packaged" flooring makes old surfaces like new

Renew "beat-up" floors and traffic lanes with job-tested Plastic Rock. Bonds to concrete, wood or steel; perfect feather edge; spark-proof, skid-safe wet or dry; dustless, noiseless, easily cleaned; will not splinter, crumble, curl or loosen. Hundreds of tons rolling on steel wheels only pack denser; 10-year-old floors show no wear. Plastic Rock comes complete, packed in handy barrels; materials uniform in quality; no "formulae" or guesswork; simply mix and trowel (average thickness 1/2"). Maintenance crew or contractor can easily apply and have ready for use in 48 hours. Used everywhere by industry, railroads and institutions.

Plastic Rock puts shock-absorbers on your floors.

Get free bulletin "Q-1"

UNITED LABORATORIES, INC.
16803 EUCLID AVENUE • CLEVELAND 12, OHIO

If you write maker identify as IEN - 1073

FLEXIBLE STORAGE FAST SELECTION

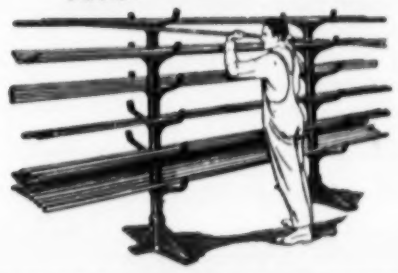
Time lost and hauling each bar from the old style, closed side rack is readily saved with Brown Time-Saving Racks which require only inches of side movement. Each length, width, and thickness of stock is displayed in "goldfish" visibility for quick selection. Waiting workmen are served promptly. Additional storage capacity can be added at any time by ordering one or more of the interchangeable units.

Respacing the units is easy, since standard racks need not be anchored or braced unless crane loaded. This storage flexibility can be further extended by adding or subtracting arm-holding sections.

Brown Racks are simple, durable, made of metal in five standard models. They can't burn, sag, or twist. Depreciation is practically nil. Lined up in soldierly rows, they make a neat orderly appearance, which not only builds employee enthusiasm, but generates a more respectful attitude toward economies in general.

SEND FOR BULLETIN NO. 26N.

BROWN'S *QUICK-SERVE* RACKS



BROWN ENGINEERING CO.
122 NORTH 3RD ST. READING, PENNA.

If you write maker identify as IEN - 1074

one standard **FLEXLOC** SELF-LOCKING NUT

covers temperature range to 550°F

Because they are all metal and require no auxiliary locking device, FLEXLOCS lock and stay tight even at higher temperatures. See your local industrial distributor for literature and samples or write SPS, Jenkintown 14, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

FLEXLOC LOCKNUT DIVISION

SPS JENKINTOWN PENNSYLVANIA

If you write maker identify as IEN - 1075

STURTEVANT DUSTLESS BLENDERS

Thoroughly Blend Substances into an Inseparable Mass

The 4-Way Mixing Action of the Sturtevant Dustless Blenders thoroughly mixes two or more substances into an inseparable whole . . . every part of which is the same analysis. Single receiving and discharging opening insures tight sealing during mixing process. "Open-door" accessibility permits thorough cleaning. The fast, accurate mixing operation increases output . . . cuts mixing costs. Mixing capacities from ¼ ton to 75 tons per hour. Write.

STURTEVANT MILL COMPANY
113 CLAYTON STREET • BOSTON 22, MASS.

If you write maker identify as IEN - 1076

MULTIPLE BENDING SAVES DOLLARS

Here is a Pedrick Production Bender producing five identical frames simultaneously. These savings can be yours too with a Pedrick bender. Multiple bending is adaptable to almost all bending operations, including pipe, tube, reinforcing bars or structural shapes.

Smaller and larger machines available.

Write for descriptive folder.

PEDRICK TOOL & MACHINE CO.
3640 N. Lawrence St., Dept. 7, Phila. 40, Pa., U.S.A.

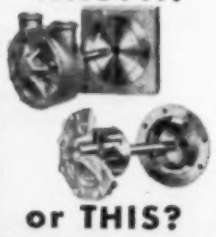
If you write maker identify as IEN - 1077

HOW TO PICK THE RIGHT PUMP FOR YOUR PURPOSE

THIS?...

THIS?...

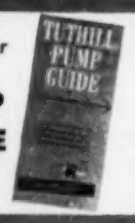
THIS?...



or THIS?

Tuthill now makes it easy for you to select the pump best-suited to the service you require. In one simple, letterhead-size table, the Tuthill Pump Guide gives you the details you need—types of service, pump models for each, capacities, pressures, speeds, packing, mountings, and exclusive features. Saves time, work and trouble.

Write for this **PUMP GUIDE** *today!*

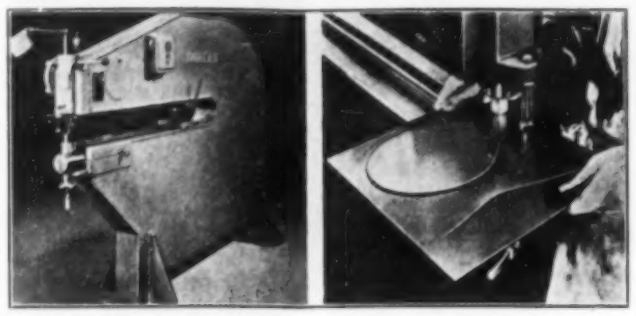


TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

If you write maker identify as IEN - 1078

SHEARING . . Motor driven machine for mild steel to 10 gage, also beads

Source: WALES-STRIPPIT CORP.
361 Payne Ave., North Tonawanda, N. Y.



Shearing speed from 10 to 36 fpm.

Reciprocating action, by a motor driven cam, provides a big speed short stroke for the upper shear blade in this new Tru-Edge machine. It can be employed to follow a straight, irregular or curved path on either inside or outside cutting. It will make an inside cut without a starting center hole since the tools will pierce the work. Throat depth measures 48 inches. Various attachments are available for straight and circle cutting. The shear blades can be replaced by tools that can apply the machine in bending and forming operations.

If you write maker identify as IEN - 1079

THREADING . . Motor driven machine with power chuck for pipe to 4 inches

Source: GAINES-COLLINS CO.
5472-76 Alhambra Ave., Los Angeles 32, Calif.

Motor rates 3 hp.

Thread-O-Matic 44 is a new addition to the company's Quijada line of motor driven pipe threading machines, previously described IEN-11074-52. The machine is driven by a two-speed motor in connection with a transmission that provides selection for four speeds both forward and reverse at a single lever on the side of the housing. The pipe is gripped in two sets of jaws, four at the front and four at the rear. Gripping force increases with torque.

Interchangeable die heads take pipe from 2½ to 4 inches. Adaptors are available for sizes from ½ to 2 inches. A flat blade reamer cleans the inside of the pipe. A coolant pump is belt connected to the motor. A pan separates the chips.

Identify as IEN - 1080

The plastic pipe business is growing and, with it, developments in equipment for its extrusion. F. J. Stokes Machine Company now offers a complete packaged unit that can be applied on the pipe job for sizes to 6 inches. It also will extrude structural shapes with the required tooling. Stokes is forecasting 100,000 ton of plastic extrusions by 1962.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

If you write maker identify as IEN - 1081

production flows smoothly...

at top speed, at all times, yet free of rejects

Kester makes 62 different fluxes to meet any requirements. Why not write our Technical Department for full information?

KESTER SOLDERING FLUX

KESTER SOLDER COMPANY
4275 Wrightwood Ave., Chicago 39
Newark 5, N. J. • Brantford, Canada

KESTER SOLDER

If you write maker identify as IEN - 1082

The OFFICE VALET and Checker RACKS

Costumers, Wardrobe Racks, Locker Racks and Check Rooms.

An Answer to every Wraps Problem

Welded steel **Valet Racks** keep wraps dry, aired and "in press"...end unsanitary locker room conditions . . . save floor space—fit in anywhere . . . standard in all strictly modern offices, factories, hotels, clubs, schools, churches, institutions or wherever there is a wraps problem.

Write for Catalog No. 5

VOGEL-PETERSON CO.
1127 West 37th St. • Chicago 9, Ill.

If you write maker identify as IEN - 1083

Same Rating

But what a difference!

Both safety switches shown here have the same horsepower rating when used as disconnects on a.c. motor circuits. But the small switch on the left is the revolutionary new Cutler-Hammer design, compact, space-saving, easy to handle, with new dependability of performance.

Up until now safety switches have invariably been much larger than the motor control with which they have been used. This has created difficult installation problems. Even when space was available, their bulk and weight made mounting difficult; and the much larger size of the safety switch in such close relation to an associated control enclosure has simply been all out of proportion to the latter. This detracted from the appearance of the complete installation.

Cutler-Hammer engineering has ended all this as far as a.c. motors are concerned. The new and exclusively Cutler-Hammer Bulletin 4110 line of Horsepower Rated A.C. Motor-Circuit Safety Switches saves as much as 65% in size, and matches safety switch and motor control in size, convenience and dependability. These switches are available in ratings from 3 h.p. to 30 h.p., 230 volts a.c. and from 7½ h.p. to 50 h.p., 575 volts a.c. These switches have many features and *have no substitutes* even remotely comparable. CUTLER-HAMMER, Inc., 1378 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER-HAMMER
SAFETY SWITCHES
C-H

If you write maker identify as IEN - 1085

ARE YOUR MEN FALL GUYS?

Are You Stumped with Ruts and Bumps?

STONHARD RESURFACER

. . is your answer! Use it to patch rutted and broken floors, or as a complete overlay. Only ½ inch is needed — no special tools are required. It featheredges and absorbs shocks that shatter concrete. STONHARD RESURFACER can be used on wood or concrete! Find out the full story, mail the coupon below today.

STONHARD COMPANY

Building Maintenance Materials Since 1922

102 Stonhard Building, 1301 Spring Garden St., Philadelphia 23, Pa.

Please send me your RESURFACER folder: 102/1/53

Name .....

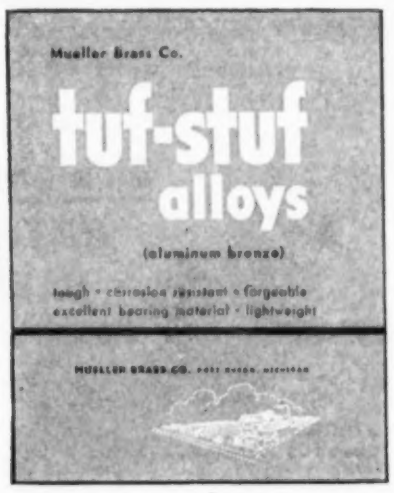
Company .....

Address .....

City ..... Zone ..... State .....

If you write maker identify as IEN - 1086

90-A



This new engineering manual of facts on MUELLER BRASS CO. TUF-STUFF® ALUMINUM BRONZE ALLOYS is ready.

Write for your copy today

MUELLER BRASS CO. • PORT HURON 26, MICH.

If you write maker identify as IEN - 1087

SAVE TIME & MONEY ON INSPECTIONS

Fine, Imported Instrument Available at 50% Saving

STEREO MICROSCOPE

FOR INDUSTRIAL OR HOBBY USE

WIDE, 3 DIMENSIONAL FIELD

•

Excellent Depth for Working Under Magnification!

$150 Val. *Only* $75.00 Pstpd.

Now, for the first time — a fine, imported Binocular Microscope at a substantial saving. Will pay for itself over and over in speeding, improving quality control. EDSCORP Stereo Microscope can be used for inspections, examinations, counting, checking, etc. Fixed 3 power objective with 3 pairs of matched eyepieces to give you powers of 15X, 30X, 45X. Rack and pinion focusing. Interpupillary adjustment. Instrument is removable from base for mounting on equipment or bench. Working distance — 2¾". Adjustable for extra height. Fine hardwood case included. Recommended for lab, shop, factory or home use. We guarantee complete satisfaction or your money back.

WE'LL SHIP ON 10-DAY TRIAL OFFER *Attach Coupon to Company Letterhead*

Edmund Scientific Corp., 309 E. Gloucester Pike, Barrington, N. J.

Please ship EDSCORP Stereo Microscope Stock No. 70,011 on 10-day Trial Offer

☐ Our check is enclosed in amount $75.00. ☐ Bill us on open account.

☐ Send Additional Stereo Microscope Details.

Name .....

Company .....

Address .....

City ..... Zone ..... State .....

If you write maker identify as IEN - 1088

STRAIGHTENING . . Hard fiber tools to smooth out sheet metal assemblies

Source: PENN FIBRE & SPECIALTY CO.
2026-32 E. Westmoreland St., Philadelphia 34, Pa.

$7.50 per set

Five pieces measuring 9 in. in length by ½ in. in thickness present various end shapes in a new line of hard fiber tools. They can be employed to remove kinks, wrinkles, to straighten dents, align trim, open gutters, force doors, all with the aid of a hammer. The fiber absorbs the shock blow of the hammer.

If you write maker identify as IEN - 1089

CORROSION PROOFING . . Liquid dries to protecting strippable film

Source: SEAL-STRIP INC.
50-17 70th St., Woodside 77, N. Y.

Free sample upon request

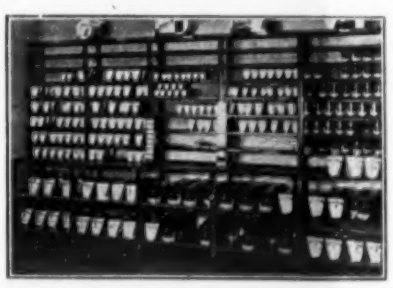
Finished product or work in process can be protected in handling, storage and shipping by application of the company's new Cold Spray protective plastic coatings. Liquid material is applied by spraying with pressure to about 100 lb. on the air line and to 50 lb. on the fluid line. The spray gun is held about 8 in. from the work. Vertical surfaces can be sprayed with an 8-mil film without sagging. The film dries to touch in 30 min. and is hard in 24 hours. When the protection is no longer required, the film can be slit and stripped clean.

Coverage is 500 sq. ft. per gal. per mil of thickness. The dry film shows excellent resistance to attack by gasoline, oil, grease, acids, alkalis, alcohol, salt spray. A coated panel can be bent upon itself without damaging the film. Colors include aluminum gray, Army drab and clear. List price is $4.15 in single gallons, $3.75 per gal. in 50 gal. drums.

If you write maker identify as IEN - 1090

STORING . . Steel shelving made in standard independent sections

Source: KARL A. HERMAN CO.
410-44 Fuller Ave. N. E., Grand Rapids 5, Mich.

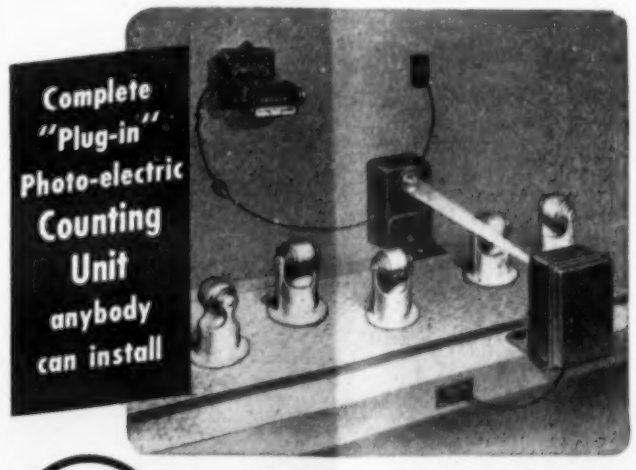


For warehouse, factory

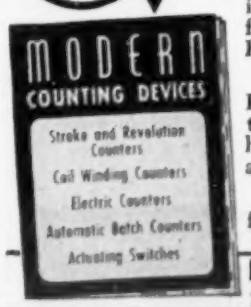
Section width is 32 in. and height is 87 in. in this new standardized sectional steel shelving. Two designs provide a lower portion 24 in. in width and a unit that is 12 in. in width from top to bottom. The former is shown in the illustration in a five section assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

If you write maker identify as IEN - 1091



Complete Catalog mailed on request.



Ideal for counting objects of irregular size or shape, objects too small or too light to operate a switch, freshly painted or hot objects, fresh food, etc.

Factory-adjusted and wired for plug-in connection to lighting outlet. (Also furnished for permanent connection.) Requires no technical skill.

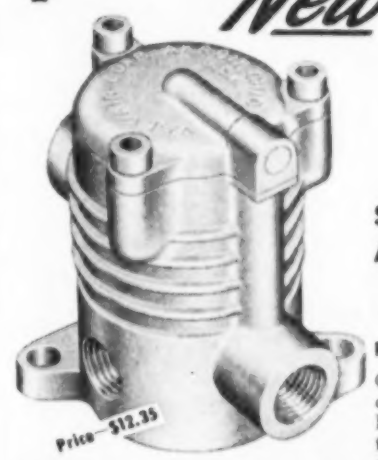
Includes rugged, heavy duty Wizard Electric Counter, also rugged, industrial quality Actuator and Light Source housed in cast aluminum cases with adjustable mounting brackets.

Ask your PIC representative or send for literature.

PRODUCTION INSTRUMENT COMPANY
700-10 W. Jackson Blvd., Chicago 6, Ill.

If you write maker identify as IEN - 1092

VALVAIR'S *New*



SOLENOID PILOT *Air Control* VALVE

•

SMALL ONLY IN SIZE, LARGE EVERY OTHER WAY!

Over 20,000,000 cycles of life may be confidently expected. We believe this valve to be the most rugged ever offered in its class. Valvair's method of sealing prevents wear on seats. Models include 2-way and 3-way either normally open or normally closed. Orifice sizes: 1/16", 3/32", 1/8"; 1/4" pipe tap. Maximum current consumption — 10 watts. For air, water, vacuum, oil or inert gases.

GET NEW BULLETIN "MQ-1"

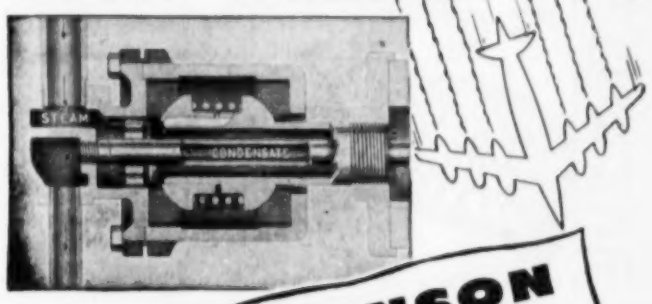
VALVAIR CORPORATION • *Affiliate: Sinclair-Collins Valve Co.* 949 Beardsley Avenue • Akron 11, Ohio

REPRESENTATIVES IN PRINCIPAL CITIES

Rely Upon Valvair — 2-WAY — 3-WAY — 4-WAY

If you write maker identify as IEN - 1093

Trail-Blazer . . .



JOHNSON *Rotary Pressure* JOINTS

As a brand new approach to an old problem, the Johnson Joint introduced a form of stuffing box without stuffing, and without any need for oiling or adjusting. Years of service in the textile and paper industries have proved it unmatched for the twin tasks of boosting efficiency and slashing maintenance. Now its unusual possibilities are being utilized on rubber mills, grain dryers, rolling mills and many similar machines. If you're looking for a better way to get steam or liquids in or out of rotating machine parts, get all the facts.

Sizes and special types for all needs; write for literature.

The Johnson Corporation
846 Wood St., Three Rivers, Mich.

If you write maker identify as IEN - 1094

Hanna AIR AND HYDRAULIC Cylinders AND Valves

Here's Power and Control . . . for 101 uses

YOU CAN SPEED PRODUCTION, cut costs and simplify the actuation and control of many of your machines and equipment by using the fast, smooth *power of Hanna Cylinders* with the *exacting control of Hanna Valves.*

Hanna Cylinders are available in low pressure models operated by air, oil or water up to 110 p.s.i. and in high pressure hydraulic types operating to 1500 p.s.i., in a range of mounting styles to meet all requirements. There is a complete line of Hanna Valves including hand, foot, solenoid and pilot operated, which provide a wide choice of control.

Write for Bulletins 255 and 256 on Hanna Cylinders.

Hanna Engineering Works

HYDRAULIC AND PNEUMATIC EQUIPMENT — CYLINDERS — VALVES — ACCESSORIES

1748 Elston Avenue • Chicago 22, Illinois

If you write maker identify as IEN - 1095

THERE'S MONEY IN SCRAP!

RECLAIM YOUR METALS

Yes, Sir, now's the time to turn your brass, bronze and aluminum turnings and borings into money. Do it the STEARNS way — clean your secondary metals from iron and steel particles quickly, efficiently and economically with a STEARNS Type "LLP" Magnetic Separator.

Easy to install, simple to operate, the STEARNS "LLP" is a permanent magnetic separator providing continuous, automatic separation at practically no expense. Furnished with motor drive, the STEARNS "LLP" is a complete unit that can be operated anywhere in the shop.

Write today for complete information — you'll be money ahead with a STEARNS Magnetic Separator. Ask for Bulletin 46-D.

This STEARNS separator is processing steel and brass chips in the repair shop of a prominent coal company.

Foremost in the Magnetic Field

Stearns MAGNETIC INC.

626 South 28th Street • Milwaukee 46, Wisconsin

If you write maker identify as IEN - 1096

BRADY QUIK-LABEL PIPE MARKERS

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy, Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

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W.H. BRADY COMPANY

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If you write maker identify as IEN - 1097

BLACK & DECKER PORTABLE GRINDERS ESSENTIAL WHEN WORK CANNOT BE MOVED

TOWSON, MD.—Possessing ample power and reserve for every grinding operation, B&D Portable Electric Grinders are essential for grinding, wire brushing, buffing and polishing all types of metal surfaces when the work cannot be brought to the tool. They remove rust, scale and paint; grind or cut off rivets, bolts, pins, studs, etc.; smooth welded surfaces. Commutator and switch compartments are completely sealed against abrasive dust; top-quality parts and husky housings are featured in all 3 models (3", 5" and 6" wheels). For demonstration, see your local B&D Distributor. For free literature, write: Black & Decker Mfg. Co., 608 Pennsylvania Ave., Towson 4, Md.

5" Portable Grinder

Priced from $67.00 to $100.00.

LEADING DISTRIBUTORS EVERYWHERE SELL

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PORTABLE ELECTRIC TOOLS

"I WISH I HAD"

This column concentrates upon reader requests for information on sources of supply for products or services or technical advice which we ourselves cannot supply, advises you of new patent-protected products for your possible manufacture, and available surplus of specialized products.

It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

MANAGER . . "I wish I could find a company in the metal working field that could use 30 years of experience in executive administration, manufacturing and sales. I am at present in Merion, Penna." **IEN W-1**

SAND BLASTING . . "I wish we had a source for a used sand blasting cabinet to measure about 34 by 36 by 60 in. and to be similar in design to Macleod or Pangborn. We are in Cincinnati, Ohio." **IEN W-2**

SURPLUS . . "I wish we had a buyer for a special machine that we no longer need. It consists of a 12 ft. rotating table on a vertical axis that mounts twenty hydraulic heads providing a 1-in. stroke and rating 25 tons on 1,000-lb. hydraulic pressure. The head pistons are 8 in. in diameter. The turntable rotates continuously at a variable speed between ½ and 2 rpm. The machine is in Niagara Falls, N. Y." **IEN W-3**

SURPLUS . . "I wish I had a buyer for about 400 new thermostats Perfex Model 200D-48. Range is 40 to 70 deg. F. Each unit is packaged in its original carton. The stock is in storage near Milwaukee." **IEN W-4**

SURPLUS . . "I wish we had a buyer for a 73-kva. Allis Chalmers generator direct connected to a Cummins IHD 600-hp. diesel engine. The generator operates on 220/440 volt 3 phase ac. Assembly is on an I-beam skid which also mounts the belt connected exciter. The equipment is open for inspection in Chicago." **IEN W-5**

SURPLUS . . "I wish we had a buyer for our Carbide & Carbon activated carbon solvent recovery equipment that operates automatically and has 16,000 cfm. capacity. We have used it for recovery of hydrocarbon type solvents but have no further use for it now. It is located in Brooklyn, N. Y., and is open for inspection there." **IEN W-6**

SURPLUS . . "I wish I had a buyer for about 50 Chicago, Cleveland and Thor pneumatic squeeze riveters, 500 micrometer countersinks and 2,000 high speed countersink cutters. All are in Lancaster, Penna." **IEN W-7**

PLEASE WATCH FOR YOURS

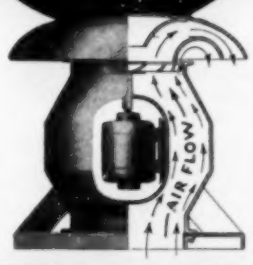
Certain copies of this publication for the next few months will carry a post card on the front page. It is intended for your use to make sure you still want to remain on our mailing list. Please watch for the one with your name on it.

OK or correct your name and address as they appear on the card. Please also check the questions asked. They are simple, self-explanatory, essential to our circulation audit.

If you write maker identify as IEN - 1098

EXHAUST DANGEROUS FUMES EFFICIENTLY SAFELY

Bifurcator Roof Ventilators exhaust fumes from plating tank operation. Photo courtesy General Electric Company.



Exhaust abnormally hot air, corrosive, explosive or toxic fumes with DeBothezat Bifurcator Roof Ventilators. Bifurcator is a direct motor-driven fan with a divided housing. Fumes are bypassed (bifurcated) around motor, which is mounted in a separate chamber. Easy to install. Available with fan wheels from 12" through 48" in diameter, delivering up to 42,000 CFM. Write for catalog.

Bifurcator Roof Ventilators

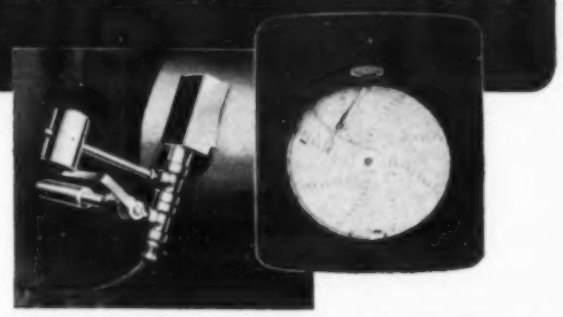
DeBOTHEZAT FANS DIVISION

American Machine & Metals, Inc.

East Moline, Illinois

If you write maker identify as IEN - 1099

NOW! CONTINUOUS MEASUREMENT OF ROLL SURFACE TEMPERATURES



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The system consists of an *entirely new type* of measuring head . . . plus a Dynalog *Electronic Recorder or Controller. Minimizes ambient or radiant temperature errors. No scoring of the roll. Operating range: —40°F to +350°F, higher under special conditions.

Write for Bulletin 405.

The Foxboro Company, 421 Neponset Avenue, Foxboro, Mass., U. S. A.

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One man LOADS...CARRIES... UNLOADS...STACKS... without BACKING AND TURNING!

Straight-line production methods call for straight-line materials handling if maximum benefits are to be gained. And that's one important way in which Lull Traveloader can step up the efficiency of your operations. One side-loading Traveloader using a straight-line system, can do the work of 2 or 3 conventional machines . . . do it faster and in half the space!

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NO CHIPPING REQUIRED

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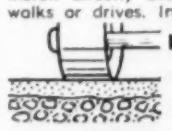

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